

# **Plug Power Inc. (PLUG) Q1 2024 Earnings Call Transcript**

Seeking Alpha - Earnings Call Transcripts

May 9, 2024 Thursday

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**Length:** 10316 words

**Byline:** SA Transcripts

**Body**

Plug Power Inc. (PLUG)

Q1 2024 Earnings Conference Call

May 09, 2024, 8:30 AM ET

Company Participants

Meryl Fritz - Manager, Marketing and Communications

Andy Marsh - President and Chief Executive Officer

Paul Middleton - Chief Financial Officer

Sanjay Shrestha - General Manager, Energy Solutions and Chief Strategy Officer

Conference Call Participants

James West - Evercore ISI

Eric Stine - Craig-Hallum

Manav Gupta - UBS

Bill Peterson - JPMorgan

Colin Rusch - Oppenheimer

Chris Dendrinos - RBC Capital Markets

Craig Irwin - ROTH MKM

Chris Senyek - Wolfe Research

Jordan Levy - Truist Securities

Andrew Percoco - Morgan Stanley

Amit Dayal - H.C. Wainwright

Skye Landon - Redburn Atlantic

Presentation

Operator

Greetings and welcome to the Plug Power First Quarter 2024 Earnings Call. At this time, all participants are in a listen-only mode. A question-and-answer session will follow the formal presentation. [Operator Instructions] As a reminder, this conference is being recorded.

It is now my pleasure to introduce Meryl Fritz, Marketing and Communications Manager. Thank you, Meryl. You may begin.

Meryl Fritz

Thank you. Welcome to the Plug Power Q1 earnings call. This call will include forward-looking statements. These forward-looking statements include, among others, statements of expectations, beliefs, future plans and strategies, anticipated results from operations and developments and other matters that are not historical facts.

We intend these forward-looking statements to be covered by the Safe Harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934.

We believe that it is important to communicate our future expectations to investors. However, investors are cautioned to not unduly rely on forward-looking statements and such statements should not be read or understood as a guarantee of future performance or results.

Such statements are based upon the current expectations, estimates, forecasts and projections as well as the current beliefs and assumptions of management and are subject to significant risks and uncertainties that could cause actual results or performance to differ materially from those discussed as a result of various factors, including, but not limited to, the risks and uncertainties discussed under Item 1A Risk Factors in our Annual Report on Form 10-K for the fiscal year ending December 31st, 2023, subsequent quarterly reports on Form 10-Q and other reports we file from time to time with the Securities and Exchange Commission.

These forward-looking statements speak only of day in which the statements are made and we do not undertake or intend to update any forward-looking statements after this call or as a result of new information.

At this point I would like to turn the call over to Plug Power's CEO, Andy Marsh.

Andy Marsh

Thank you, Meryl, and good morning, everyone, and thank you for joining us today. This quarter has been pivotal for Plug. As we continue to execute on our mission to drive the green hydrogen economy, we are focused intensely on enhancing our cash management strategies and accelerating sales growth.

These efforts are crucial as we navigate through the recalibrations necessary for long-term sustainable growth. Our strategic decisions this quarter are designed to solidify our leadership in the green hydrogen economy. We've made significant strides in scaling up our operations. Our hydrogen generation network has been -- particularly has seen substantial growth.

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The production facilities in Georgia, Tennessee are currently performing at full capacity and we're eagerly anticipating the completion of our new plant in Louisiana. This addition will not only boost our production capacity by 15 tonnes per day, but also significantly reduce our dependency on third-party hydrogen suppliers.

Building on this momentum, we are planning the development of up to six additional hydrogen plants across United States. This expansion is critical for meeting the demand for green hydrogen as industry and transport sectors seek sustainable energy solutions. The strategic placements of these plants will help mitigate logistical challenges, reducing the cost of hydrogen delivery and enhancing our competitive edge in the market.

Plug continues to advance the pending loan guarantee from the Department of Energy and awaits the conditional commitment approval announcement. This program is expected to bolster the build-out Plug's liquid hydrogen facilities throughout the United States. Commensurately, the company has started a process with advisers to complement our anticipated DOE projects with project equity investors and project finance partners to finance the build-out of the plants.

Our strategy, expanding partnerships and securing new deals has continued to bear fruit this quarter. The extension of our partnership with Uline, and securing a substantial deal with a top US automotive manufacturer are a testament to our robust business model and our ability to deliver comprehensive hydrogen solutions that meet diverse customers' needs. These partnerships not only demonstrate our market leadership, but also reinforces the trust that major industrial players place in Plug to support their transition to sustainable energy practices.

In Europe, our significant expansion efforts are highlighted by the commissioning of 20 PEM electrolyzer systems at sites throughout the continent, representing the largest build-out of its kind in the Western world. This is a key part of our strategy to meet the rapidly growing demand for our products globally.

Pivotal component of our strategy for electrolyzers is the basic engineering and design package, which currently encompasses projects totaling approximately 4.5 gigawatts. These BEDP contracts are just not a testament to our technology and market leadership, they represent potential future sales that could be transformative for Plug.

By facilitating our customers' journey to final investment decisions, these packages can significantly shorten the sales cycle and enhance our ability to lock in substantial long-term contracts. As we continue to advance our technology and increase our project capabilities, Plug is enhancing its footprint, not just in the US but globally. This strategic expansion aligns perfectly with our mission to lead in the green hydrogen economy, ensuring that we remain at the forefront of delivering innovative and sustainable energy solutions.

Look, despite our successes, we have faced challenges, particularly this quarter with equipment margins due to strategic inventory reductions and this quarter of product sales. In response, we've implemented a series of restructuring measures aimed at reducing costs and improving efficiencies. This includes headcount reductions and operational considerations, which are difficult, but necessary decisions to enhance our long-term sustainability and profitability.

Looking to the future, Plug is poised for significant growth. The foundations we are building today through operational excellence, strategic expansion and a real focus on robust financial health are designed to solidify our leadership in the hydrogen market. As the world continues to turn to sustainable solutions, Plug will be ready to meet and exceed the demands of the growing industry.

To conclude, we remain deeply committed to our strategic goals and are optimistic about the opportunities ahead.

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Now Paul, Sanjay and I are ready to take your questions and provide further insights into our journey.

Question-and-Answer Session

Operator

Thank you. We'll now be conducting a question-and-answer session. [Operator Instructions] Our first questions comes from the line of James West with Evercore ISI. Please proceed with your questions.

James West

Hey, good morning, Andy. How are you?

Andy Marsh

Okay, James. Good morning.

James West

So we're a few more months into your pricing strategy adjustments. And curious, initially, how that went, how it's going now? I suspect your customers will kind of understand the pricing needed to be adjusted. But I'd love to hear your kind of thoughts or your views on how that process has gone so far and what we should expect over the next several quarters?

Andy Marsh

So James, our primary focus, first and foremost, has been looking to increase the value of -- the price of hydrogen and also the price of service. When we look at our top eight customers, six of those customers, we have come to final written contractual agreements and the two remaining customers, we are actually at the point where we're down to final steps in the negotiations. We expect that the hydrogen business will be approaching gross margin breakeven by the fourth quarter, which will be a major accomplishment. But I think even -- and this is broadly with the material handling market, but we've actually learned a lot along this journey about the value we are bringing to customers. And it is why I expect during the coming three quarters, that you're going to see equipment sales and we know where they're going to be for the second quarter are going to rebound. We feel really good about that after this recalibration process. And when I look at the electrolyzer business, I can tell you that we have been very successful in raising prices 10% to 15% as we negotiate and work with the customers. So across the board, it's been a difficult journey, a learning journey by things being really beneficial for the long-term success of this business.

James West

Okay. Got it. And then just a follow-up for me. With Georgia, Tennessee online and Louisiana coming online soon and I think the focus probably shifts to Texas next. But as we think about as we're getting towards maybe now or the end of the year, how much of your current hydrogen, I guess, green hydrogen supply that you're providing to customers, are you now and going to be satisfying by year-end with your own production versus buying from third parties?

Andy Marsh

Yes. James, I would expect we'll be in the 65% range because of growth this year. So today, we're -- today, we're about at 50 tonnes per day. I expect we'll be closer to 65 tonnes per day by year-end. We'll have about 45 tonnes of our own capacity. And you're right, the next big event after that is bringing taxes online and that should be late in '25, and that would bring 45 tonnes per day of hydrogen.

James West

Got it. Okay. Great. Thanks, Andy.

Andy Marsh

Thanks, James.

Operator

Thank you. Our next questions come from the line of Eric Stine with Craig-Hallum. Please proceed with your questions.

Eric Stine

Good morning, everyone.

Andy Marsh

Good morning, Eric.

Eric Stine

Hey, so you called out the cost savings measures taken in the quarter, I know previously you had talked about targeting $75 million in annual cost savings. So just curious what you just disclosed for 1Q, is that above and beyond the $75 million? And maybe just some thoughts on given this path you're going down margins profitability, where those cost savings can go all-in?

Andy Marsh

I'm going to turn that over to Paul.

Paul Middleton

Yes. So a couple of things, Eric. One, we've made really good progress. A lot of the actions that we had announced and thought about have been completed and you're starting to see that in the rates. You'll see a full quarter benefit of that in Q2 because it was kind of mid-quarter when some of those were taken. There's also actions that are underway. So some things like rooftop consolidations, some were able to do fairly quickly and some will be completed in Q2. And so you'll see some of those benefits start to manifest in Q2 and progress on into Q3. We've come out of the gate laser-focused on cash management. And across this organization, everybody understands that cost curtailment and cost downs are critically important. So I'm absolutely optimistic and excited that I'm sure there's more opportunities as we progress through the year that we're going to continue to find and look to reduce the cost. So some things are pretty clear and we're able to act on those pretty quickly. And some things just take some time to work through to figure out what those best actions and activities are. So I think we're in a great position in terms of what we announced and in a great position of what we can do incrementally.

Eric Stine

All right. That's good color. Thank you. And maybe just a follow-up. The DOE loan, I know you've had confidence in that all along, but it does seem like your commentary this morning would maybe take that up another notch, maybe just current thoughts on timing and next steps.

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Andy Marsh

Well, look, I think you hit it on the head, Eric. We continue to advance the process with the DOE and we're anxiously awaiting the committed approval announcement. And look it is -- if you talk about items we're laser focused on it.

Eric Stine

Got it. And amount, I mean, no changes there. It's just -- it's consistent with what you've talked about in the past?

Andy Marsh

It is consistent with what we talked about in the past.

Eric Stine

Okay. Thank you very much.

Andy Marsh

You're welcome, Eric.

Operator

Thank you. Our next questions come from the line of Manav Gupta with UBS. Please proceed with your questions.

Manav Gupta

Good morning, guys. It looks like during the quarter, the equipment margins came under particular pressure. There were some improvements in other gross margin, but this is an area where you saw some pressure. But just trying to understand the outlook of it. Do you expect this to improve based on some of the other commentary you have made? But generally, what's your outlook for the equipment margins? And do you genuinely believe that like 1Q could be the bottom here in equipment margins?

Paul Middleton

Yes, absolutely. I think I would say this, we've been pretty consistent that scale and volume makes a big difference. And so when you look at the level of equipment sales in Q1, those are -- that was a lower level that those are situations that don't drive the most opportunistic leverage on labor and overhead. We've got the facilities and the capacity to produce substantially more than we're shipping at the moment. So there's nothing but upside. And if you look at our forecast, Q1 is, as we've been consistently sharing is, always the lowest quarter of the year and it's in that 10% to 12% range of our sales. And so if you think about that mathematically, that means we're going to be shipping a substantial amount more and recognizing a lot more in the balance of the year. So just volume alone is a big benefit. But even some of the cost reduction benefits that we announced in the first quarter those -- a lot of those were operational. When you think about rooftop consolidations and headcount reductions and those will pay dividends as we balance through the year and we start to realize the full benefits of that. So it's absolutely upside from here.

Manav Gupta

Okay. The second question is your outlook for your electrolyzer business. And do you think once the government absolutely finalizes the 45-week guidance, there will be more people who would know exactly what the guidance has looked like. So they'll be more comfortable placing those electrolyzer order. So just trying to understand what's your outlook for the sales of electrolyzers for the rest of the year?

Andy Marsh

I'm going to turn that, Manav, over to Sanjay, but I would highlight, when you look at the activities we have, we're on the ground commissioning 50 megawatts in Europe today. And there's -- that activity in Europe is going to grow and continue to grow. And we expect that if I was going to use a crystal ball at the moment, you may even get some in between guidance in July -- June, July time frame. And I would suspect at the moment final guidance at the end of the year, but I will let Sanjay talk about what he expects ahead of that business in 2024.

Sanjay Shrestha

Sure. So Manav I think you should absolutely expect meaningful sequential growth, as Andy just talked about it, right. We have over 20 systems that's going through site acceptance test as well as final commissioning that will start to show up in Q2, that will start to show up in Q3. And by the way, for 2024, our electrolyzer business is really about executing on a pretty substantial backlog that we already have. Having said that, what you're going to see here is, Andy touched on our basic engineering design packet, where we have a 4.5 gigawatt of that basic engineering design package. Some of that is in the US. A lot of that is in Europe. We also have a pretty big opportunity on that basic engineering design packet in Asia Pac. And many of these customers, right, some of them are going into final investment decision by the end of this year. Some of them are going into the final investment decision by early 2025 and you will start to see the basic engineering design packet convert into backlog. And the good thing for us with that is it normally provides us with a substantial growth as you start to look beyond this year and into '25 and '26, it also makes this business very, very predictable. We can manage costs. We can manage working capital. We're working off of a very substantial backlog. So when you look at that and then think about also a pulse from a cost reduction perspective, right, facility consolidation, things we are doing to reduce the overall cost of our stack. So as you go into the end of this year, you should see pretty substantial change in the margin profile for that electrolyzer business, and that trend will only go to the right and keeps getting better as you go to '25 and beyond. That's how we should think about it.

Manav Gupta

Thanks Sanjay for a very detailed response. Thank you.

Sanjay Shrestha

Of course.

Andy Marsh

Thanks Manav.

Operator

Thank you. Our next questions come from the line of Bill Peterson with JPMorgan. Please proceed with your questions.

Bill Peterson

Hi. Good morning, everyone. Thanks for taking the questions.

Andy Marsh

Good morning, Bill.

Bill Peterson

We'd like to talk about the full year and also the first quarter. It did come in light. You did reiterate one-third in first half, two-thirds in the second half. I believe you had previously expected to drive year-on-year growth for your overall business in 2024, perhaps even double-digit growth. And I think that you were expecting originally maybe about 15% of full year revenue would land in the first quarter. That would have for the quarter was lighter than expectations. So I guess, first off, do you still expect to be able to drive year-year growth this year for the business overall? If that's the case, that implies a pretty large step-up in 2Q revenues in a one-third, two-thirds scenario, maybe some of which is driven by what Sanjay just said. But were some of the revenues in the first quarter, they didn't show up and they're showing up in the second quarter. What's driving the step-up in the second quarter? And more importantly, what's driving the step-up in the back half of the year? If you can parse by applications and energy and so forth, that would be helpful.

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Andy Marsh

Sure. So Bill, let me take a step back, and I'm going to hand it off to Paul. We do expect, and as I said on the last call, growth this year. It's certainly -- it will be -- we would expect that when we look at the numbers that by the first quarter, into the second quarter, we expect to be about 33%. So I think the analysts have us out there and the consensus the analysts have today when we review it in general, we think they're about right for the second quarter. And so I think what the Street is guiding for the second quarter is in line with our revenue expectations. Paul, maybe you can talk about. I know part of it's the commission of the electrolyzers, which kind of slipped from the first to second. I know there's one material handling customers at three sites that were slipping into the quarter, but you may want to talk about that.

Paul Middleton

Yes. And I guess I'd just preface it by say, if you look at the math and you assume Q1 being, call it, 11%, 12% and 10% to 12% in that range of the full year, mathematically, that infers the full year, absolutely is going to grow off of next -- last year, as an example. So that's for sure. And as Andy said, there's the 5-megawatt system, we're really excited about that deployment and the pipeline, the backlog, the traction that we're making, getting the customers to deploy that and work it through those start-up activities. That just provides a learning wheel that we can accelerate deployments as we balance through the year with all of those that we have in the pipeline. So those will come in, in Q2, and there's a lot of activity for what will happen in the second half. If you look at the second half, I mean, two-thirds of our sales as we inferred and you have the typical seasonality with material handling and then you have the added compounding benefit of the scaling of these new things that we're doing with electrolyzers and electrification and new cryogenic hydrogen products that are starting to get traction. So it's -- those are the real compounding factors that drive that second half effect and I think we feel pretty good about Q2 and we feel really good about the full year.

Andy Marsh

Sanjay, maybe you can describe the electrolyzer business because you have the backlog there as well as you in your most of your cryogenic business. Maybe you can touch on that and I'll touch a little on application.

Sanjay Shrestha

Absolutely. So Bill, I think, one of the key things here that actually did have an impact in Q1, as Paul alluded to, right, so all this 5-megawatt system that we're going through commissioning process, rev rec happens when you actually do a full site acceptance test, right. A lot of that is on us. Some of that is on customers, and there's a lot of factors you got to navigate through. And we've done that, right. Now I think as we sit here in Q2, you will actually see a lot of those get completed. And based on the number of systems we're working on, you should anticipate that there's going to be a pretty big sequential jump in that revenue going from Q1 to Q2 then to Q3, and that's what's going to really help the energy business sales. Second piece here is also our cryogenic business where -- and let me break that into two pieces here, right? As you think about our second half of the year for our cryo business, you should expect a meaningful growth in our mobile refueler. You should also expect meaningful growth in our liquid hydrogen trailer business, which obviously has a higher ticket item as well as a better margin profile, giving you a much bigger second half in that business than even in the first half. And finally, on the liquefaction side of our business, we anticipate new awards here, but these are big ticket items as well, right? So I think when you -- the way you want to think about it, meaningful revenue contribution happens really in the second half of the year, not so much in the first half of the year, and that's why this one-third and two-third is the reason why we feel pretty good about based on sort of the high-level growth number we're talking about for the full year. Andy?

Andy Marsh

Yes. And on the application side, Bill, we just got done a board meeting, and I can tell you, Jose Crespo, who runs our application business, feels that we don't include hydrogen in that business, but we feel pretty confident, probably just like some of the cryo business and the electrolyzer business that the funnel is there, the orders are there, and that 35% of our revenue will be associated with applications. Most of that material handling customers, mostly people we've done business with for a long time. So I think, in general, this was a rough quarter, recalibrating customers to get through not doing PPAs anymore, so it took a little bit more time to get things closed. Working through the price increases. But I feel good we've come out of it, Bill. So -- and so we feel we're -- we feel that pretty good about the year. And as Paul said, we're probably at 10%, 12% of the year. And that we've always said we expect revenue to increase this year.

Bill Peterson

Yes. Thanks for the color and insights there. On the DOE loan -- conditional loan approval, this looks like this has been shifted out by around 1.5 months. I thought prior expectations were at the end of March. So I guess what is your latest expectation around timing, the feasibility of securing the loan this year? I guess also even especially ahead of a presidential election? And based off the press release, it sounds like you're thinking the DOE, the process could be waiting on additional, I guess, partners or project, equity investors. If you can explain more of why the delay and what the next steps are and what we should assume to think about for the full year -- for the year on this DOE loan?

Andy Marsh

So Bill I may have confused you on that writing. That activity with equity investors is separated completely from the activity with the DOE. It is activity we started as we think about making sure those projects are fully funded. Look, I remain really excited and I can tell you that the conditional commitment application is moving forward. The momentum is good. And boy, we really do hope to share more news soon.

Operator

Thank you. Our next questions come from the line of Colin Rusch with Oppenheimer. Please proceed with your questions.

Colin Rusch

Thanks so much guys. On the material handling side, could you talk about the trend lines on diversity of customers, how many more customers are you guys seeing? Are you seeing folks scale up within that business? Just trying to get a sense of what that opportunity set looks like now.

Andy Marsh

Yes. That's a good question, Colin. I can tell you that, we are doing two customers for the first time this coming quarter. Both of them probably have distribution centers combined, which are in the 150 type distribution range -- center range. Brand new, brand new activity. Our penetration in the auto market continues to be really good. And we have worked through, and as I said, I think our value proposition as we've gone through this price increases have really shown that there was more opportunity for Plug. And I would expect -- I know what's in Jose's and Tim Terrill's funnel. You'll see continued customer expansion this year. And the next three quarters, you'll see us back to normal operation in material handling.

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Colin Rusch

Thanks so much. And then my follow-ups for Sanjay. As you guys are looking at the opportunity set for the electrolyzer business and doing site selection and looking at the underlying cost structure, can you talk a little bit about your strategy around procurement of power? Obviously, there's a lot going on in the power markets right now with interconnection as well as data center demand electrification. Just want to understand where your thought process is right now on that procurement.

Andy Marsh

I'm going to hand that to Sanjay, but what you say is actually a big opportunity for our stationary business, Colin. That's right. So go ahead as well as our hydrogen business, but go ahead, Sanjay.

Sanjay Shrestha

So, Colin, I think as it relates to our customer mix, right? I think majority of the opportunity if we were to think about this basic engineering design packet, right, that we talked about 4.5-gigawatt, a lot of that is really going and displacing gray hydrogen in the refining industry to make it green hydrogen. That's some of the opportunity. Second set of the opportunity there that you're seeing is really on sort of like sustainable aviation fuels, if you would, right, where they are really identifying a location where they can get access to low cost power in the European market, so you can imagine, right, where you have a lot of hydro, where you can actually tap into some of the wind electricity with the low cost. That's where we're seeing some of this basic engineering design packet work. Another big opportunity in places like Australia, where you're actually talking about big solar farms, low cost solar, and this is really more of a green ammonia opportunity to impact export into the Asia market, right? So one of the good things here, Colin, is as a company that now has the largest PEM electrolyzer running in the Western world, we're actually able to also work with our customers on things we have learned, what challenges we went through, how we can help them with that. And then we're looking at the customers win, who are the ones that actually have, as you rightfully pointed out, source of that power, the outlook for that offtake, whether it's going into the refining industry or going into the green ammonia market, going into the sustainable aviation fuel, you got to have the power, you got to have the land. You got to have the water. And that is what really gets you to that final investment decision, right. So and again, look, working hand-in-hand with them as a part of FEED study really puts us in a very unique and a strong position to be able to collaborate with them and that's clearly the key criteria we use. At the end of the day, Colin, it's really about selling value here for our customers, right. Bringing all that to the table and it's not just about price versus cost. Are we bringing value that allows them to have that attractive levelized cost of hydrogen whereby a very attractive green ammonia as well as opportunity to be able to play in the refining industry.

Colin Rusch

Excellent. Thanks so much, guys.

Andy Marsh

Thanks, Bill.

Operator

Thank you. Our next questions come from the line of Chris Dendrinos with RBC Capital Markets. Please proceed with your questions.

Chris Dendrinos

Yes, good morning. Thank you.

Andy Marsh

Good morning, Chris.

Chris Dendrinos

Good morning. I guess I wanted to start out here just on the cash burn a little bit. And there is some decent sequential improvement as far as limiting the cash flow from ops out then. So any color you can give around the cadence for the rest of the year? Should we expect kind of continued improvement from where we sit today? Just how should we think about that? Thanks.

Paul Middleton

Yes. Yes, we're obviously excited that we -- it's close to 40% reduction year-over-year in the first quarter. We've talked about the full year being in that 70% reduction. So -- and the reason why -- and that infers the second half is even bigger, right, in terms of that reduction. And the reason why that is, is for a couple of different reasons. One, the CapEx will be down year-over-year overall. But for the CapEx that we did plan for this year, it's a little bit heavier concentrated in the first half, but that will dissipate a lot obviously in the second half. Second thing is that we anticipate -- and you already see it with the working capital getting better in the first quarter, but we anticipate even substantially more leverage opportunity in inventory, in particular, in the coming quarters and even more so in the second half. So that's a big contributor. And then the third thing is improving the margins and improving the cash flows in the business. And so scale will make a difference as we -- with two-thirds of sales happen in the second half. But the other factor that will make a big difference is the cost downs that we're driving. So we'll start to see more and more of the benefits and some of the actions we've taken in the first quarter and what we're completing in the second quarter. And then the impact of the fuel is pretty impactful in terms of the price increases and turning on these facilities that we're turning, which again will start to have benefit in Q2 and even more benefit in Q3 and Q4. So those are the drivers that we're laser focused on to improve it. And we're still optimistic that we're going to get to that 70% reduction year-over-year. So you should definitely see continued progression as we move through the year.

Chris Dendrinos

Got it. Thank you. And then I guess maybe just shifting gears here a little bit to the BEDP 4.5 gigawatts of opportunity. In the past, you guys have commented that the conversion rate on that type of activity is extremely high. I guess my question is how -- what portion of those projects should we expect to kind of go forward? I guess, maybe historically, as you do the BEDP activity, what's the conversion rate on just the project actually moving forward into development? Thanks.

Sanjay Shrestha

I think it's -- to put the precise number there, I think it's – look we probably want to go through some more time here. But let me give you an explanation of how we're thinking about it, right? So when we do a basic engineering design packet that really gets a customer to a point where they can actually now go and do a final investment decision. That's the key thing here, right? They got to get to their FID. And the key for them to get to the FID is really going to come down to the entire facility. We're doing a very significant piece of that FEED work related to the electrolyzer. We are obviously pretty much involved with the customer thinking about right design architecture, right? What it's really going to come down to is, for them source of power. For them, offtake in terms of what product are they actually in fact, making from a hydrogen derivative standpoint. As we look at our BEDP funnel, we feel very good about some of them getting into the final investment decision this year. Many will get into final investment decision in 2025. So it's really all about building that base of business and that backlog throughout this year into next year, and really puts us in a position where it becomes a very substantial growth business for us, not just for one or two year but for many years to come and really a great visibility when you think about it for the -- until even really the end of this decade, if you would, right? So that's how we think about it rather than really trying to handicap 80% will move or 70% will move, we're really working with the customer in terms of making sure that they can get to their final investment decision. So we end up going from BEDP, in fact, new award bookings and, therefore, the backlog to really support our growth in the business.

Andy Marsh

One of the items, Sanjay, that why I see this so positive because it really is part of the sales cycle and you have the customer paying you to work with you, which shows a level of seriousness about their plans going forward. And that's probably from a business point of view, is one of the real values, I think, we're getting from these engagements.

Sanjay Shrestha

100%. Yes, absolutely.

Chris Dendrinos

Understood. Thank you.

Operator

Thank you. Our next questions come from the line of Craig Irwin with ROTH. Please proceed with your questions.

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Craig Irwin

Thank you. So most of my questions have actually been answered. So I want to step back into the bigger picture, right? You have some really exciting pedestal customers in the materials handling market, people using hydrogen forklifts. I guess more than 40% of the groceries in America move around on your hydrogen forklifts. And I assume that there's several other companies of similar character to your pedestal customers that are evaluating the technology maybe have small implementations and represent interesting longer-term opportunities. Can you maybe sort of scope out for us what you're saying to those customers now with your repositioning of this business? Do you feel that you will be adding pedestal customers over the next few years? And anything else that you think would be useful for us to understand the longer-term trajectory after we get through this short-term repositioning?

Andy Marsh

So Craig, this is Andy. Good morning. First and foremost, the answer to your question is, yes. But to take it to a higher level, I can tell you we are doing deployments with two customers this quarter who have 150 warehouses and distribution centers, who we have never done business before. So that is -- and I can tell you, there is an active, active sales activity going on, and we expect material handling business to get back to normal starting in the second quarter and continuing throughout the year. I can tell you that at MODEX, which is the big material handling show, we probably had as much interest from new customers as we've seen any years. So we're -- especially here in the US, we're pretty -- we weren't had to go through this readjustment. We would have been even more focused in the first quarter, but boy, we're not -- we actually expect we'll be naming names over the coming year. So the answer to your question is yes, Craig. And, look, while I look at our business, if you want to take a step back. Sanjay's activity in electrolyzers will become our dominant business probably in '25. And that -- because when you look at the growth rate and the amount of activity has going on, and the material handling will become -- will remain a substantial portion of our business and it will remain a driver of our hydrogen business. As I mentioned earlier in the call, by the end of the year, we expect to be using 30% more hydrogen than we did at the end of last year. So there is growth luckily because of -- part of what we've gone through here, we've been able to see the value proposition stronger. And not only is there growth, but we think with hydrogen, we'll be close to breakeven by the end of the year. And so we see significant expansion of the business.

Craig Irwin

Excellent. And then just two quick questions around green hydrogen. Do you maybe have a cumulative tonnes or some other metric that you can share on the production from Georgia and Tennessee? That would be really helpful for people to frame out how that ramp has gone. And then on green hydrogen, $18 a kilogram, I've talked to different people in the market, and there are suggestions that you can get quite a lot more than that for green hydrogen. So there may still be a little bit of an arbitrage if you can sell that in the open market. Can you maybe help?

Andy Marsh

I'm going to take the first part, and I'm going to let the analysts here beside me, take the second part of that question. So as an operation guy, we're running Tennessee and Georgia at about 80%, 85% at the moment. When I look at -- we've been ramping -- we can get to 100% capacity out. Logistically, you're probably just from an optimization point of view and delivery and logistics we'll probably be running that 85%, pretty much the 90% all quarter. That's how we're kind of looking at it, Craig. We're not looking at 100% capacity. But when I look at the flows the last three or four weeks, that's about where we are. So Sanjay maybe you can talk about the arbitrage opportunity and how you're thinking about that?

Sanjay Shrestha

So Craig you're absolutely right about that, right, given I think what we have done here in Georgia. So -- but look, our mission always has been to make sure that you keep driving the price of hydrogen to a level where it's a great value proposition for our end customer and not try to be more opportunistic if you would, right? Having said that, given our production capacity, given some of the discussion we're having, so there is clearly an opportunity for us to do a spot sale. We are having those discussions, live discussion with many players in the industry as we sit here right now, given that Georgia is now, as Andy talked about it, at the capacity that it is. Tennessee is running at that 80%, 85% capacity, and we got Louisiana coming online. We know what we need internally. We know what's available. And those discussions are having. And logic there is absolutely a right one. And on this call, I probably don't want to quite get into the exact pricing number. But your point is very well taken. And yes, there is an arbitrage opportunity and that should absolutely help, especially as you think about Q4 of this year, really helping margin, growth, revenue and everything for our fuel business.

Craig Irwin

Great. Well, congratulations guys on some significant progress in a difficult period. You made a big difference in a number of items.

Andy Marsh

Thank you, Craig.

Operator

Thank you. Our next question is come from the line of Chris Senyek with Wolf Research. Please proceed with your questions.

Chris Senyek

Hey, good morning guys. Thanks for taking my question.

Andy Marsh

Good morning, Chris.

Chris Senyek

I wanted to just follow up, Andy, on a previous question clarifying the DOE loan. You don't need an equity investor for conditional commitment. But would you need investors or partners to reach a financial close?

Andy Marsh

No. That's an easy one. I'm sorry Chris.

Chris Senyek

Yes. No, that's helpful. And then can you perhaps remind us on the timing for receipt of proceeds from the DOE loan on receipt of the conditional commitment?

Andy Marsh

Chris, when I look at it, we want to keep you really informed about what's going on and the exciting development of ahead. It's important to recognize we have ongoing progress since -- we've really been teaming well with the DOE. And as I said earlier, we're really -- we have great forward momentum. And on all this, we've really hope to share more information soon.

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Chris Senyek

All right. Fair enough. And I guess my final question is on the volumes or spot volumes that you could probably sell into once Louisiana comes along. Can you perhaps quantify how much you would be able to sell? Thanks.

Andy Marsh

Maybe take a shot at that, Sanjay?

Sanjay Shrestha

Based on our ongoing discussion right now, we anticipate it could be somewhere in that 10 tonnes per day kind of a neighborhood.

Chris Senyek

All right. Thank you, guys. I'll turn it over.

Andy Marsh

Okay. All right, Chris.

Operator

Thank you. Our next questions come from the line of Jordan Levy with Truist Securities. Please proceed with your questions.

Jordan Levy

Good morning all and appreciate all the details. Maybe for Sanjay here. On the electrolyzer sales side, I think you touched on this, and I appreciate there's a lot of complexity in the sales process and shipment process there. But maybe just to take a step back, given some of the commissioning delays and that sort of thing. Can you just comment on sort of the overall visibility of that segment? And what might give you confidence in that visibility improving through the next quarter and the remainder of the year?

Sanjay Shrestha

I mean, Jordan, as we touched on this a bit, right, for 2024, this is really about executing on our existing backlog, right? So we are executing on over 25 5-megawatt system. We have over 25 1-megawatt system. We are executing on multiple 100-megawatt large-scale projects. So it's really execute, execute and execute again, right. So that's the team for electrolyzer business for 2024. Now another piece here also is, look, I mean, we are doing a lot of installation. We're operating in so many different countries and continent, if you would. And specification, requirements, all the different things that goes on from the site acceptance tests tend to vary from location to location. And this is something we're learning along with our customers. And frankly speaking, as we're launching the product, getting into this rapid ramp mode, there's been a lot of learnings and some of these have taken a bit longer than we anticipated, which is why we've got the Q1. Some of that is shifting into Q2. Some of the Q2 likely goes also into Q3. But as we get enough systems installed here in Q2, this also helps us from being able to actually do a transfer of the title to the customer even before we complete the entire site acceptance test, makes it even easier from the revenue recognition perspective, right? So that's why from a cadence standpoint, we feel pretty good about it. Look, there's a lot of work that the entire team is doing, very proud of everything that they do on an everyday basis to make sure that this is all happening. You should expect that there is going to be a pretty big sequential growth in Q2 and another one in Q3, and it should really be a pretty meaningful year for our electrolyzer business in 2024. Beyond that, you should also expect based on this BEDP new bookings materializing setting the stage for '25, '26 and beyond as all this BEDP work that we're doing with our customers working hand-in-hand gets into that final investment decision.

Jordan Levy

Got it. Appreciate that. A separate topic, a quick follow-up. On the $40 million in write-downs, you referenced in the release, I know we'll get more details on that in the Q. But just wondering if should expect those to kind of continue through the year or anything on that?

Paul Middleton

Yes. A lot of that is labor and overhead in the plants. When you have a lower level of production activities and sales activities, you just don't get the opportunity to absorb as much. And so there may be a little bit of that in Q2 as we continue to ramp and scale. We expect it to dissipate tremendously in the second half as we move towards substantially more sales activity and more production. There are also another favorable counter to that is that the continued progress in the cost down. And so you have both effects happening, which is we're reducing costs and we're increasing absorption by producing more and selling more. So I think that you'll see that trend down substantially as we move through the year.

Jordan Levy

Got it. Thank you all.

Operator

Thank you. Our next questions come from the line of Ameet Thakkar with BMO Capital Markets. Please proceed with your questions.

Unidentified Analyst

Hey, good morning, everyone. You've got Ryan on here for Ameet. Thanks for taking our questions.

Andy Marsh

Good morning.

Unidentified Analyst

So I was just wondering if you guys would be able to provide an update on where the cash balance is today? And sort of along those lines like if you're planning to provide an interim update on the issuance under the ATM program since the last update at the end of February? Just if you tap out at all this current quarter. Thanks.

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Paul Middleton

Yes. Obviously, we're going to be filing our Q today. So there'll be 100 pages of detail that will have a lot of that in there. But I'd say roughly -- what you'll see is roughly $150 million that we raised as disclosed in the Q. And that's where we sit through today. We -- I will share with you -- this wasn't part of your question, but I'll share this. We're laser-focused on debt solutions. I mean we've been working that conversation for a long time. We've got a couple of parties that we're closer to that than we've ever been under terms that are things that -- our biggest challenge today is it's just been in finding terms that we feel like are meaningful and helpful for us, where we're going. But these are two parties that we feel extremely well about and have done a lot of diligence and know them very well, and we'll see whether that manifests into conclusion. But that's our primary -- it has been and it continues to be my primary focus is finding debt solutions that could fund the balance of our burn, which if you do math, it means we in terms of the total context of the 70% reduction of the last year, in terms of what we need, we're more than halfway of that capital sourcing. So the need will start to dissipate a lot, which is helpful. But and progress that we continue to show is putting us in a better and better position for sourcing that capital. So hopefully that helps provide a little bit of color on how we think about it.

Unidentified Analyst

Yes, that's great. Thank you so much.

Operator

Thank you. Our next questions come from the line of Andrew Percoco with Morgan Stanley. Please proceed with your questions.

Andrew Percoco

Great. Thanks so much for taking the question this morning. I guess my first question is a little bit higher level and coming back to I think Colin's question before on just power procurement strategies. And I think I've asked this before, but the market seems to be evolving pretty quickly. AI power demand, there's a lot of demand for clean power. It seems like we're pretty constricted in terms of how much supply we can bring to market, at least in the US. And your business is very much dependent on low PPA prices. So that supply demand imbalance has been pushing up PPA prices at least in the US. I'm just curious, can you just provide a little bit more context in terms of how you're thinking about power procurement for your additional green hydrogen facilities in the US beyond Texas and New York, which obviously already have offtake agreements signed?

Andy Marsh

Go ahead, Sanjay.

Sanjay Shrestha

Hey, Andrew, how are you. So look, I think we've actually had this conversation on our last call as well, right? So this has obviously been a very core to our strategy in terms of identifying the location. And as you can imagine, it's going to be really region-by-region basis, right, in terms of where do you want to go, how do you want to allocate, where do you want to put the plant. When we think about building this green hydrogen generation network, not just a plant, but the network in North America, we've always said we want to go to a location where there is going to be either an existing player we can work with that's pretty far along from a development standpoint that can provide us with that green electron at a price where economics make sense, right? And in that green electron, you should think about, obviously, solar, wind complemented with nuclear and hydro. That's how we think about it, right. And today, as you rightfully pointed out, Georgia, pricing is looking pretty attractive for us. New York, we're getting a lot of hydro allocation for that. Texas, I'm glad we signed the PPA, what we did based on some of the comments you're making. So we -- you should think about this as like we're looking at the West Coast, where we believe that you can actually get some hydro as well as solar power in terms of the location of where we build the next plant from a network standpoint. That we're also looking at an opportunity in the middle of the country where you might be able to access low-cost attractive nuclear power. We're also looking at somewhere between that middle of the country and the West Coast, where they are really doing a lot of solar, wind development as well in that region. Don't be surprised if there is a plant number two and three in Texas as well. We can obviously always expand our existing footprint and the presence in Georgia as well. But look, I mean, I think on this power pricing, given everything that's going on, you are right, there is probably some inflationary pressure here. But let's not forget, right, as the supply chain comes back in line, as the rates do what they do, levelized cost of electricity, it's not just one faceted situation, right? You've got a variety of different things. And directionally it should continue to go down while there might be some disruption on a short-term basis, and this is a long game at the end of the day, right? If there is a situation of where the power prices went up over the next six months, we will more likely wait to make sure that it is normalized before we really go down the path of doing anything. But today for us to accomplish what we're looking to accomplish, we certainly have tentacles in a lot of different locations where we don't feel like there is any need to change our strategy in terms of what we're trying to do. Would you like to add anything to that, Andy?

Andy Marsh

Yes, I would just say that if you listen to Craig's comments and questions, you listened to what the price we're paying in Georgia, what the price we're paying in Texas, what the price will pay in New York, I think it's incredible differential advantage that we already have these contracts in place to allow us to do future -- for our future expansions over the next couple of years. So I actually think it makes me feel pretty good.

Sanjay Shrestha

Andy, this is one of the key benefits of the first move.

Andy Marsh

Yes.

Andrew Percoco

Got it. Understood. I guess just to follow up on that, do you have any excess power supply kind of banked already or transmission access banked already or for additional projects beyond Texas and New York or would you be kind of starting from scratch on those additional facilities?

Sanjay Shrestha

So we've been in this development journey now for over three years, Andrew, right. So nothing is really for us in terms of what we're thinking about the new build and the new opportunities starting from scratch, right. Now having said that, have we secured a PPA for opportunity in the West Coast. Look, I mean, this is -- depends on what kind of power you're looking to get, what kind of opportunity you're looking to get, right? You can think about California, you can think about Arizona, right. Arizona is probably the likely location where we're really trying to figure out what's the best model that works. So like in case of Georgia, we already have additional power allocation if we wanted to expand that capacity. Texas, you know very well. There are reasons in Texas where you can still get fully attractive renewable electricity, right. So nothing is from scratch, but in the level of activity, I wouldn't say is completely buttoned up, but it's far along enough that it really gives us a view on multiple new plans, where we think what our input cost is going to look like that really gives us that arbitrage and the profit margin opportunity while continuing to drive the cost of hydrogen there.

Andrew Percoco

Understood. Thank you.

Sanjay Shrestha

Sure.

Operator

Thank you. Our next questions come from the line of Amit Dayal with H.C. Wainwright. Please proceed with your questions.

Amit Dayal

Thank you. Good morning, everyone. Most of the questions have been answered.

Andy Marsh

Hey, Amit.

Amit Dayal

Hey, Andy. How are you?

Andy Marsh

Okay.

Amit Dayal

Yes. I mean just have some adjacent questions to things already discussed. Starting with maybe the sales mix for this year. Excluding fuel and other services, just on the equipment side, material handling versus other hardware offerings for '24, what the sales mix would look like? And then how that changes in '25 and '26?

Andy Marsh

So, Paul, I'll take an initial shot at this, and I'll let you answer. I would expect about one-third of our business of 35% will be material handling, probably about 30% will be electrolyzers, probably 10% to 15% hydrogen and the remaining will be associated with liquefaction and other cryo business.

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Amit Dayal

Understood. Thank you for that. And does this remain similar in 2025? Or do you see sort of other parts of the business outside material handling like ramping more aggressively?

Andy Marsh

Yes. I think, Amit, we think electrolyzers will be the biggest part of our business come 2025. And that I would expect our liquefaction business to grow in '25 to be a larger percentage.

Amit Dayal

Okay. Thank you. And then maybe for Paul, yes, so maybe for Paul, just from an operating cost perspective, Paul, like what should we sort of assume on a quarterly basis going forward, 2Q onwards for the rest of 2024?

Paul Middleton

Yes. So our OpEx run rate, we expect from last year to this year to be down for a host of reasons. And one of the biggest drivers is the cost reductions that we've been focused on. A lot of the things we did in Q1, we'll benefit that. So I would -- I think a good proxy is about, let's call it, $120 million to $125 million on a quarterly run rate going on through the balance of the year.

Amit Dayal

Okay. Thank you. That's very helpful. That's all I have guys. I appreciate it.

Andy Marsh

All right.

Operator

Thank you. Our next questions come from the line of Skye Landon with Redburn Atlantic. Please proceed with your question.

Andy Marsh

Good morning, Skye.

Skye Landon

Hi. Good morning, guys. Firstly, we recently had the results from the EU Hydrogen bank auction where we saw what were lower-than-expected winning bids. I'd be interested to hear your thoughts on the results because on one hand, it's great to have a low figure as this kind of provides higher electrolyzer capacities. But on the other end of the things potentially adds more risk to projects reaching FID. So do you think the subsidy is enough? Or would you actually prefer to see a higher subsidy level, but with less capacity awarded? And then related to this, if you could provide any commentary on your involvement with any of the winning bids and projects there, that would be great as well. Thanks.

Andy Marsh

I would just say, Skye, yes, we would have liked to see the prices higher. Sanjay, you've been involved and maybe you can talk about our customers. I know some of our customers were successful.

Sanjay Shrestha

Some of our customers have, but I think, Andy, this is still an evolving process. So I think look, we'd love to talk, as you rightfully pointed out, right, I think this is an evolving process. Look, I think like an energy industry subsidies should be fair even to every piece of the energy industry. So we want to see how it all unfolds and maybe not get into the customer specifically at this point in time.

Andy Marsh

Yes. I think that probably is helpful. I know that doesn't help you. But Skye I think that is -- I think that's the general consensus of us in the hydrogen industry.

Skye Landon

Fair enough. No. That's good color. And then maybe on the 20 electrolyzer systems that you're currently, I guess, commissionings currently undergoing on. Are you able to put a capacity figure on this? And then also while I'm sure there's differences on a project-by-project basis, can you share a little bit more about the process involved to kind of get the site acceptance and the process of getting some of the equipment sites and a process that needs to go through in order to actually reach revenue recognition? Just so that we can get a bit more clarity around exactly how this works.

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Sanjay Shrestha

Absolutely. And look and this is something we've obviously been spending a lot of time and very fair question, Skye, right? So the breakdown here of all this commissioning effort that's going on it, it is actually -- there's over 20 5-megawatt system, okay. And just to put that in context, all of that is not Q2, it's throughout the year. but there's over 20 5-megawatt system that we're actually going through commissioning phases, making sure that the customers are ready, and there's over 20 1-megawatt system. And as we just touched on it, right, there is also some large-scale projects that are continuing to go through fabrication, and upwork, rectifiers and things like that. But here is the key when it comes to going from -- so you've got a couple of process, right. You do a factory acceptance test. When the system leads the factory. And you don't -- depending on the situation, sometimes you produce how much hydrogen is produced in that factory acceptance test depends on whether it's a 1-megawatt system versus a 5-megawatt system. And the key to actually get the site acceptance test is make sure that you have stack performance buttoned up in terms of what the turndown of that stack needs to be like make sure that all the compliance and the documents are ready to go. That's another piece. And finally, what it really comes down is have you produced enough hydrogen at the specification for that site. And that's really the final piece before you do the handover and say, all right, we've completed the site acceptance test. That's really what it comes down to.

Skye Landon

Just a follow up on that. Would it be fair to say that some of these -- some of the sort of delays in commissioning is on the customer side of things as well rather than just on Plug Power side of things?

Sanjay Shrestha

Look, we always work hand-in-hand with customers, right? But the customer's site also has to be ready. It's not just our commissioning team and everything we do. You're absolutely right about that. And look, there are some situation where some of those sites could end up being Q3 rather than Q2, but we have tremendous activities going on where the customer is also ready. And the team is really working hand-in-hand with them to be sure that we can do the handover and get the site acceptance tests done. But you are right. In some cases, there are things that customers need to do as well.

Skye Landon

Perfect. Thanks for the extra details guys. Cheers.

Sanjay Shrestha

Thank you.

Andy Marsh

So, I'm going to close it out. I want to thank everyone for joining us today. I look forward to discussions with our analysts throughout the quarter. And look, the foundations, I walked Georgia, I walked Louisiana. I have over of our factories with one of our key partners to help us build these hydrogen plants in Rochester and no one has the infrastructure, the customer relationships, the vision for this industry that I believe that Plug has. I think it's a real differential advantage. It's been a tough four or five months. But we're moving in the right direction. So I look forward to our engagements throughout the quarter and throughout the year. So thank you, everyone, for joining the call.

Operator

Thank you. This does conclude today's teleconference. We appreciate your participation. You may disconnect your lines at this time. Enjoy the rest of your day.

**Load-Date:** May 9, 2024

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