

# **FuelCell Energy, Inc. (FCEL) Q1 2024 Earnings Call Transcript**

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**Body**

FuelCell Energy, Inc. (FCEL)

Q1 2024 Earnings Conference Call

March 07, 2024 11:00 AM ET

Company Participants

Tom Gelston - Senior Executive Vice President, Finance & Investor Relations

Jason Few - President & Chief Executive Officer

Mike Bishop - Executive Vice President, Chief Financial Officer & Treasurer

Mark Feasel - Executive Vice President & Chief Commercial Officer

Conference Call Participants

George Gianarikas - Canaccord Genuity

Manav Gupta - UBS

Eric Stine - Craig-Hallum

Ryan Pfingst - B Riley

Noel Parks - Touhy Brothers

Presentation

Operator

Hello, and welcome to FuelCell Energy First Quarter of Fiscal 2024 Financial Results Conference Call. At this time, all participants are in listen-only. A question-and-answer session will follow the prepared remarks. As a reminder, this conference call is being recorded.

At this time, I'd now like to turn the call over to Tom Gelston. Tom, you may now begin the conference.

Tom Gelston

Thank you. Good morning everyone and thank you for joining us on the call today. As a reminder, this call is being recorded. This morning, FuelCell Energy released our financial results for the first quarter of 2024, and our earnings release and our quarterly report on Form 10-Q are available in the Investor section of our website at www.fuelcellenergy.com.

Consistent with our practice, in addition to this call and our earnings press release, we have posted a slide presentation on our website. This webcast is being recorded and will be available for replay on our website approximately two hours after we conclude the call.

Before we begin, please note that some of the information that you will hear or will be provided with today will consist of forward-looking statements within the meaning of the Securities Exchange Act of 1934.

Such statements express our expectations, beliefs, and intentions regarding the future and include, without limitation, statements with respect to our anticipated financial results, our plans and expectations regarding the continuing development, commercialization, and financing of our fuel cell technology, and our business plans and strategies.

Our actual future results may differ materially from those described in or implied by such forward-looking statements because of a number of risks and uncertainties. More information regarding such risks and uncertainties is available in the Safe Harbor statement in the slide presentation and in our filings with the Securities and Exchange Commission, particularly the risk factor section of our most recently filed annual report on Form 10-K and any subsequently filed quarter reports on Form 10-Q.

During the course of this call, we will be discussing certain non-GAAP financial measures and we refer you to our website and to our earnings press release and the appendix of the slide presentation for the reconciliation of those measures to GAAP financial measures. Our earnings press release and a copy of today's webcast presentation are available on our website under Investors.

For our call today, I am joined by Jason Few, FuelCell Energy's President and Chief Executive Officer, and Mike Bishop, our Executive Vice President, Chief Financial Officer, and Treasurer. Following our prepared remarks, we will be available to take your questions and be joined by other members of the leadership team.

I will now hand the call over to Jason for opening remarks. Jason?

Jason Few

Thank you, Tom and good morning everyone. Thank you for joining us on our call today. Since we last reported in December, we have continued to make progress toward the accelerated implementation of our powerhouse business strategy.

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For the first quarter of fiscal 2024, revenues were lower than in the comparable prior year quarter. However, this was in line with our expectations due to a one-time revenue benefit from the expiration of a material right related to an extended warranty obligation and higher service revenues from required module replacements during the comparable prior year quarter. Today, we will provide additional detail on our results for the quarter as well as looking ahead.

Before diving into the business results, I believe it is important to give an overview of FuelCell Energy for anyone new to our story. As shown on Slide 3, we've been in operations for over 50 years, and we are a leader in developing stationary fuel cell platforms.

Our purpose as a company is to enable the world empowered by clean energy. Today, the world is in the early stages of a global energy transition to a low-carbon future. We believe FuelCell Energy is well positioned, as an energy delivery and emissions management company to be part of the solution by supporting customers on a safe, secure and practical path to net carbon zero. This important purpose is what drives our passion for this work and guides our strategic focus.

We have 188 modules in commercial operations in North America, Asia and Europe. And we are focused on entering additional markets around the world. Our proven Carbonate Technology has met customers' needs, for over 20 years and has generated more than 15 million megawatt hours to-date.

Our recently commercialized solid oxide technology platform extends the solutions we can provide our customers, including Electrolysis and power generation using zero-emission hydrogen fuel, as the only feedstock.

We believe that our Molten-Carbonate and Solid Oxide platforms, position us to meet evolving customer needs across distributed power generation, distributed hydrogen, electrolysis and hydrogen energy storage and Direct Flue sourced carbon capture.

FuelCell Energy provides technological solutions for and collaborates with, some of the world's largest global companies, including our work with ExxonMobil to jointly develop carbon capital solutions, Toyota for distributed hydrogen with our Tri-Gen facility at the Port of Long Beach, Pfizer to enhance power reliability by building a microgrid and leveraging our thermal energy to provide steam.

Canadian Nuclear Laboratories, or CNL in Canada, to explore the viability of pairing our electrolyzer with nuclear energy and IBM through a collaboration to use AI to find breakthrough ways to alter chemistry to extend the life of our electrochemical Fuel Cells.

We are proud to be a global leader in electrochemical technology, simply stated, our Proprietary Fuel Cell Technology platforms do two things: decarbonized power and industry and produce hydrogen.

Next, let's turn to key highlights for the quarter shown on Slide 4. First, we continue to make operational progress in key projects. We announced that both our Derby, Connecticut based projects were placed in service, during our first quarter of fiscal 2024, bringing our on-balance sheet generation operating portfolio to 62.8 megawatts from 43.7 megawatts at the end of fiscal 2023.

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Our fuel cell parks in Derby are generating competitively priced renewable energy for thousands of area residents and are helping the state of Connecticut close its power generation gap.

We also continue to make significant progress building out our solid oxide manufacturing capabilities, through capacity expansion of our facility in Calgary. We are working to position ourselves as High Efficiency Solution providers, in the hydrogen marketplace.

Additionally, we continue to monitor and make adjustments to our production rate, at our Torrington facility to reduce cost and our carbonate inventory position, gives us the flexibility to meet current and forecasted demand.

As we look ahead, to fiscal 2024 and 2025, we remain focused on advancing new technologies for pilot and commercial applications. We have the technology and flexibility across our product and service offerings to allow us to participate in the global energy transition in a number of different ways. We are pleased to announce that we have entered into an agreement with the U.S. Department of State to participate in a private public project that will use FuelCell Energy's solid oxide electrolysis technology in Ukraine. This project is focused on demonstrating the benefits of an efficient carbon-free decentralized platform that can generate power and support food security through the production of hydrogen and ammonia.

Additionally, we recently entered into a power purchase agreement with the University of Connecticut, or UConn, to install four 250-kilowatt solid oxide fuel cell units. Power from these solid oxide fuel cell units will be used by UConn's new innovation partnership building. Any unused power will be exported to the Eversource grid under the fuel cell net metering tariff. We believe that this project will be an excellent example of the ability of our solid oxide FuelCell platform to answer the need for on-site resilient distributed power that will assist UConn in achieving its environmental goals and provide heat reducing their heating costs.

Next, we are taking proactive steps to maintain the strength of our balance sheet. We follow a disciplined approach to managing our capital investment by establishing investment triggers linked to key milestones. We will continue to work toward increasing revenue and investable cash flow, while taking prudent steps to raise capital and preserve the liquidity required to operate our business.

Fourth, we are focused on accelerating our global sales closure pace, contract execution and repowering service efforts in Korea. We have made progress expanding our reach in Korea. For example, we completed repowering for our new customer, Noeul Green Energy Company Limited in fiscal year 2023, and we see a significant opportunity to enter into other long-term service agreements in Korea. We believe that our work with Noeul Green Energy can serve as a model for transitioning similar projects.

Additionally, applications like electrolysis, time to power and CO2 as a delivered product are gaining momentum among a broader set of potential customers and geographies. Finally, we are opportunistically evaluating potential options to benefit from global policy tailwinds. We believe that the domestic policies that have been enacted are stable, that the proposed global policies have strong support and that we are well positioned to capitalize on the evolving energy landscape.

And now I will turn the call over to Mike to discuss the financial results for the first quarter in more detail. Mike?

Mike Bishop

Thank you, Jason, and good morning to everyone on the call today. Let's begin by reviewing the financial highlights for the quarter as shown on Slide 6. For the first quarter of fiscal year 2024, we reported total revenues of $16.7 million, in line with our expectations. Revenues in the prior year quarter totaled $37.1 million, which included a one-time benefit related to the expiration of a material right from an extended warranty obligation and higher service revenues from required module replacements.

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I will provide more details regarding service a bit later in my remarks. In the first quarter of fiscal year 2024, we reported a net loss of $44.4 million compared to a net loss of $21.1 million in the first quarter of fiscal year 2023. The resulting net loss per share attributable to common stockholders in the first quarter of fiscal year 2024 was negative $0.05, unchanged from the first quarter of fiscal year 2023.

The net loss per common share remained steady, rather than increasing, primarily due to the higher number of weighted average shares outstanding as of January 31, 2024, due to share issuances and the net loss attributable to noncontrolling interest during the quarter ended January 31, 2024, which totaled $24.6 million and was primarily due to the tax equity financing of the Derby, Connecticut projects. The impact of this net loss attributable to noncontrolling interest was approximately $0.05 per share compared to the net loss attributable to noncontrolling interest in the prior year period, which was approximately $2.5 million or $0.01 per share.

Adjusted EBITDA totaled negative $29.1 million in the first quarter of fiscal year 2024 compared to adjusted EBITDA of negative $14.4 million in the first quarter of fiscal year 2023. Please see the discussion of non-GAAP financial measures, including adjusted EBITDA in the appendix at the end of our earnings release. Finally, the company has a strong total cash position at over $348 million as of January 31, 2024.

Next, on slide 7, you will see additional details on our financial performance and backlog. In the graph on the left-hand side of the slide, revenue is broken down by category. Note that there is no product revenue for the three months ended January 31, 2024, compared to $9.1 million in the comparable prior year period. Our December 2021 settlement agreement with POSCO Energy Co. Ltd. and its subsidiary Korea Fuel Cell Co. Ltd., or KFC, included an option to purchase an additional 14 modules. That option included a material right related to extended warranty obligation for the modules. The option was not exercised. And as a result, we recognized $9.1 million of product revenues during the first quarter of fiscal year 2023.

Service agreement revenues decreased to $1.6 million for the first quarter of fiscal year 2024 from $13.9 million in the prior year period. There were no module exchanges during the quarter, whereas the first quarter of fiscal year 2023 included module exchanges at the plant in Woodbridge, Connecticut and at the plants owned by Korea Southern Power Company.

Generation revenues increased 10% to $10.5 million from $9.6 million, primarily due to revenue recorded for the Toyota and Derby projects, which began generating revenues in the first quarter of this fiscal year. Please note that the Derby projects were placed in operation late in the quarter. Accordingly, we expect to see a full quarter of contribution from those projects in our second quarter results.

Advanced Technology contract revenues increased slightly to $4.6 million from $4.5 million. Compared to the first quarter of fiscal year 2023 Advanced Technology contract revenues recognized under our joint development agreement with ExxonMobil Technology and Engineering Company were approximately $0.1 million higher and revenue recognized under government and other contracts was approximately $0.1 million lower.

Looking at the top right-hand side of the slide, I will walk through the changes in gross loss, profit and operating expenses. Gross loss for the first quarter of fiscal year 2024 totaled $11.7 million compared to a gross profit of $5.2 million in the comparable prior year quarter. The gross loss in this first quarter of fiscal 2024 is a result of unfavorable margins for generation, which included expense construction and gas costs related to the Toyota project of $3.5 million, and a derivative loss of $1.9 million related to natural gas purchases during the period.

The gross profit in the prior year period is a direct result of favorable product margins as revenue recognized had no corresponding costs, along with lower manufacturing variances.

In the first quarter of fiscal year 2023, the company also realized higher service margins due to new module exchanges occurring in the quarter, offset by lower generation margins due to $7.6 million of non-recoverable costs related to construction of the Toyota project. Operating expenses for the first quarter of fiscal 2024 increased to $30.8 million from $27.7 million in the first quarter of fiscal 2023.

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Research and development expenses increased to $14.4 million during the first quarter of fiscal year 2024 compared to $12.7 million in the prior year period. The increase in research and development expenses reflects an increase in spending, including spending on labor and materials on the company's ongoing commercial development efforts related to our solid oxide power generation and electrolysis platforms and carbon separation and carbon recovery solutions compared to the comparable prior year period.

On the bottom right of the slide, you will see that backlog decreased to $1.03 billion as of January 31, 2024, compared to $1.06 billion as of January 31, 2023, primarily as a result of revenue recognition under generation, service and advanced technologies agreements. This decline in backlog was partially offset by new service agreements backlog as a result of the agreement with Noeul Green Energy Company Limited entered into during fiscal year 2023 and new advanced technologies backlog as a result of the purchase order received from Esso Netherland B.V. in January 2024.

Turning to slide 8. This is a view of our generation portfolio. We are very pleased to have added three new generation assets, enhancing our recurring revenue profile. With the addition of the Toyota project and the two new projects in Derby, Connecticut as of January 31, 2024, the generation portfolio totaled 62.8 megawatts of assets. It's important to note that as the Derby projects were placed in service, we were able to execute long-term tax equity financings, allowing us to recycle capital back into the business.

On slide 9, we have provided a profile of our service fleet, including estimated modular replacement schedules for each site. These are customer-owned assets, which are separate from the company's generation portfolio.

Looking at historical data, you can see that the company has completed a multiyear fleet upgrade having replaced approximately 30 megawatts of modules over the past three years. This does not include module replacements under the new Noeul Green Energy Service Agreement, which were provided by KFC.

These investments are expected to result in enhanced performance, lower future maintenance costs and improved margins over the life of the modules. We are now entering a lighter module replacement cycle since we have installed longer-life modules across the platform base. We currently do not expect any megawatt class module exchanges to occur until the fourth quarter of fiscal year 2024. And as a result, we expect lower service revenues in fiscal 2024 compared to fiscal 2023.

But as noted last quarter, we believe that we have additional potential service opportunities in Korea to transition customers to new repowering agreements, similar to the contract that we executed with Noeul Green Energy, adding to our long-term service revenue opportunity.

Finally, on Slide 10, we provide an update on our liquidity and ongoing investments in project assets. Cash and cash equivalents and restricted cash and cash equivalents totaled $348.8 million as of January 31, 2024. This includes approximately $297.5 million of unrestricted cash and cash equivalents, represented by the darker blue bar on the chart in the center of the slide and $51.3 million of restricted cash and cash equivalents represented by the purple bar.

Looking at the right-hand side of the slide, there is a chart illustrating our total project assets, which make up our company-owned generation portfolio. Investments reflect capital spent on completed operating projects as well as capital spent on projects currently in development and under construction. As of January 31, 2024, our gross project assets totaled approximately $308.9 million, which excludes accumulated depreciation.

We are pleased with the project financing activity in the quarter and have taken and will continue to take proactive steps to maintain the balance sheet strength required to support our growth initiatives. As an example, given the company's current carbonate inventory position, we have continued to monitor and make adjustments to our production rate to meet current and expected demand from our Torrington facility. The company continues to prudently invest in its commercialization strategy, which we expect to enable growth in future periods.

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I will now turn the call back to Jason.

Jason Few

Thanks, Mike. Turning to Slide 12. I would like to reemphasize again the pillars of our Powerhouse business strategy, which underpins our approach towards achieving long-term growth.

The first tenet is growth. We are working to optimize our business for achieving growth in markets where we see significant opportunity for clean energy applications, our platform technologies address.

The second is scale. We plan to scale our existing platforms by investing in and extending the application solutions our platforms address and growing the capabilities of our entire team across the organization.

And third, innovate for the future. We believe our platform technologies and our culture will allow us to continue building our significant global patent portfolio, further enabling our participation in the growth of the hydrogen economy and carbon capture emissions management, utilization and storage.

We plan to develop diversified revenue streams by delivering a range of solutions and services anchored by our multi-feature platforms that support decarbonization applications and the global energy transition.

Accordingly, on Slide 13, I'd like to share some additional details on the recent commercial successes for our solid oxide platform. As I mentioned earlier, we recently announced an agreement with the US Department of State to participate in a private public project that will use FuelCell Energy, solid oxide electrolysis technology with small modular nuclear reactors in the Ukraine.

FuelCell Energy's 1.1-megawatt solid oxide electrolysis unit, which was selected for this project is expected to produce 600 kilograms per day of hydrogen, to support approximately 3 tons per day of ammonia production.

Additionally, we are conducting a design and cost study for a plant that would be capable of making 3,000 tons per day of ammonia. We are excited about this important opportunity to deploy our solid oxide electrolysis platform, integrated with NuScale small modular reactor to support energy security and agriculture in Ukraine.

Additionally, as I mentioned earlier, we recently entered into an eight-year power purchase agreement with UConn to install four 250-kilowatt solid oxide fuel cell units. UConn will provide all utilities, including low-carbon natural gas fuel and our platforms will power the innovation partnership building the university's new on-campus center for cutting-edge research and industry collaboration and innovation. We believe that these planned commercial applications will highlight the specific advantages of FuelCell Energy solid oxide fuel cell and solid oxide electrolyzer cell technologies. Our technologies offer fuel flexibility, efficiency, reliability and a small footprint for easy colocation.

We believe solid oxide presents one of the best opportunities to minimize overall cost while maximizing efficiency and that our platform can give more organizations the option to implement a flexible energy strategy, because most of the cost of hydrogen produced by electrolysis are related to the cost of input power, efficiency is one of the most effective ways to lower zero emission hydrogen cost. And we believe FuelCell Energy solid oxide platform is among the most efficient electrolysis technologies available.

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Finally, I would like to note that we have recently published our fiscal year 2023 sustainability report. We have included some highlights on Slide 14. I want to reaffirm our dedication to achieving net zero, which remains in the forefront of FuelCell Energy's priorities. We have reiterated our commitment to achieving net zero on Scope 1 and Scope 2 emissions by 2030 and Scope 3 emissions by 2050.

We are aligned with the leading standard organizations and the United Nations Climate Action goals that we believe we can impact. In addition to commitments to our environmental objectives, we are focused on the safety of our employees on the people and the communities in which we work and live and on maintaining a diverse, equitable and inclusive organization. This commitment is shared across our company and our Board of Directors.

We are a clean technology, energy delivery and emissions management company, but we are also a responsible corporate citizen wholly committed to protecting the environment, attaining net-zero goals, being a diverse, equitable and inclusive company and exercising good governance. Environmental sustainability is at the heart of what we do.

Before moving to Q&A, I will conclude my prepared remarks with some takeaways on Slide 15. I remain excited about our company's trajectory as our newest innovative technologies are progressing toward commercialization and are expected to have a positive impact on our world in the future.

We are making continued operational progress, and we are executing on large, complex projects for our customers, including putting three new generation assets in service, which adds to our recurring revenue profile. We believe our technologies have a critical role to play in transitioning to a low carbon future.

We are delivering for our customers. We are increasing our manufacturing capacity, and we are preparing for the commercialization of our new technologies and extending the value streams delivered from our existing technology platforms. We believe we are poised to capture market opportunities over the coming years.

We have a strong balance sheet and have demonstrated discipline in the allocation of capital to support growth. We believe we have appropriate liquidity to continue to fund projects in development and platform commercialization activities and to execute on our growth strategy in our target markets.

We have had success in our growth efforts in Korea, where we see tremendous additional opportunity for the future. And finally, we see growing momentum behind policy support for the energy transition in the US and internationally, and we believe we have the platform solutions that will enable FuelCell Energy to benefit from these tailwinds.

I will now turn it over to the operator to begin Q&A.

Question-and-Answer Session

Operator

We are now opening our floor for question-and-answer session. [Operator Instructions] Our first question comes from George Gianarikas from Canaccord Genuity. Your line is now open.

George Gianarikas

Hey. Good morning, everyone, and thank you so much for taking my question.

Jason Few

George, good morning and thank you for calling in.

George Gianarikas

Of course. Just maybe a first question. Can you please just give us an operational update on the Toyota program, and whether or not you've seen additional interest from new parties in the product?

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Jason Few

Yes. The Toyota project is operational, as we previously reported. It is producing power, hydrogen and water all being utilized for Toyota in support of their operations at the Total Logistics Center, which is what they operate at the Port of Long Beach. The hydrogen is supporting the imported Toyota Mirai as well as the jointly developed Class A vehicles that they develop with PACCAR under the Kenworth and Peterbilt brands and then water for the car washing operation, reducing the amount of water that they need to use, which is consistent with their environmental objectives.

With respect to additional opportunities, we do see additional opportunities for Trigen. Domestically, one of the big questions now is really how does 45d play out, and we think that that's having some impact on pacing, but there is strong interest both at a port level as well as the realization around the distributed nature of the platform, and that by it being a distributed platform, there is a number of hurdles that you can avoid in trying to get these hydrogen projects implemented, without needing to get through a lot of the infrastructure challenges that exist in trying to do centralized projects. So, we see solid interest in the Trigen platform. And we think once we get through some of this clarification, we expect that to hopefully turn into opportunities for the company.

George Gianarikas

Any guidance on the level of credits you see based on the changes in 45-E for that project per kilogram of production?

Jason Few

No, I mean we remain optimistic that the ultimate rule-making from the Treasury department is going to be consistent with the views that we've had on the Toyota project. But of course, we, like many others, we're part of organizations at comminate on the Treasury Department proposed rules. And so we remain optimistic that there won't be a change, but we certainly can't say for certain because we don't know where they're going to land.

George Gianarikas

Got it. And then just one follow-up. On Slide 10, you show that your projects in development have now basically come to zero. I'm curious as to whether that's a conscious decision on your part to kind of slow the growth of the development of projects and allocate resources in other directions? Or should we expect that to kind of grow over time? thank you.

Jason Few

No, we expect that to continue to grow projects.

George Gianarikas

Got it. Thank you.

Jason Few

Thank you.

Operator

Question comes from Manav Gupta from UBS. Your line is now open.

Manav Gupta

Guys, I just wanted to understand a little bit, we are finally seeing traction on the solid oxide fuel cells as well as electrolyzers. I think Shell signed up something with one of your peers yesterday. And I'm just trying to understand, where are you in this process of developing that offering? And do you actually see more orders come through in the second half of 2024, in 2025 on the electrolyzer front?

Jason Few

Hey Manav, thank you for the question and being on the call today. Look, we -- if you think about solid oxide for us, first, starting broadly as a platform, that has clearly opened up new opportunities for us. If you think about some of the things that we've recently announced, if you take the Trinity opportunity we announced, if you take the Yukon opportunity we just announced, both of those are -- the Connecticut Yukon opportunity is a megawatt, Trinity is smaller at 250 kilowatts. Those are two opportunities that, at least in the U.S. context, we would not have been able to participate in before because our module started at 1.4 megawatts.

So, we see a wider aperture of opportunities being created as a result of having now commercialized our solid oxide platform. So, we're very excited about that opportunity because there's many more segments and opportunities we can pursue, and we think that time to power and particularly for behind-the-meter applications, that opportunity from a sub-megawatt perspective, we think, is fairly significant.

On the electrolysis side, we think that solid oxide is the platform that ultimately over time will be the winner in the market because of the efficiency advantage. And if you look at some of the demonstrations that we've announced, for example, what we talked about today with CNL in Canada, pairing our technology with nuclear, the Ukraine announcement. When you think about the fact that those are baseload technologies that we're integrating our high-efficiency platform without we're 90-plus percent efficient and with heat, which we don't need a source of heat, but if we had a source of waste heater processed, we're at 100% electrical efficiency.

If the aim is to produce hydrogen, clearly solid oxide is going to be the winner from an efficiency standpoint. If you just assume that power being the biggest cost when you get to scale across the different platform technologies. You know f you think about -- if you just use $0.10 as a measuring stick, if you will, the cost of input power -- that's anywhere from $1.50 to more advantage from a cost differential on a price per kilogram. That's significant.

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And we think that yesterday's announcement, we think, is emblematic of the fact that as we start to really think about scaled projects and really getting to the 90 million metric tons of hydrogen that are produced already that might fall into if we were to use a color gray hydrogen, that's a lot of hydrogen, and you're going to want a very efficient platform for producing that, and we think we're going to be well-positioned to play in that opportunity.

Manav Gupta

I think my quick follow-up here is, there is a lot of demand for electricity, especially coming from the data centers. As we understand, utilities are struggling to meet that demand. And how would -- are you positioning your company in a way where eventually you can break into this market and get like -- 20 megawatt order or 30 megawatt order. Is that something you would be chasing? And if so, how would you be positioning your company to basically succeed in the eventual data center electricity providing market?

Jason Few

Yes, Manav, great question. So if you think about our company and you look historically at what we've been able to do and you talk about large-scale projects. Today, our technology is FuelCell Energy represents the largest deployed FuelCell Parks of any FuelCell provider in the world. We have a 58-megawatt platform in Korea leverage using our technology. The two largest FuelCell projects in North America also happen to be FuelCell Energy platform. So from a large scale perspective, we're very comfortable with that.

Also, with the introduction of our solid oxide technology and the ability to transition a customer from utilizing natural gas, as an example, to ultimately utilize in 100% hydrogen, we now have the ability to offer the customer that solution as well. And so we think we're well-positioned to go after data centers and we've also demonstrated the ability to effectively operate in a microgrid application.

So as we think about our company integrating to be a really compatible solution to data centers, we think about our baseload capability, we think about how we add other resources for quick ramping because we're a high temperature resource. We think about how you integrate with the grid. And we think our technology is well suited for that. But to add a little bit more to that, I'll maybe turn it over to Mark Feasel, our Chief Commercial Officer to give you a sense of how we're approaching that opportunity.

Mark Feasel

Yes. Thank you, Jason. So as Jason alluded to, when you look at this opportunity there's a few dimensions to it. There is a time to power challenge where companies today are looking to build these data centers and other high-density load requirements more quickly than the grid can facilitate it. But even beyond that, there is just a grid capacity issue. In some cases, in some geographies there's no time line in which the grids are going to go there. And it isn't just a phenomenon that's limited to any specific geography. So you can think about Singapore and Asia, you can think about Ireland in Europe and several areas here in the US. This is an issue where the simple -- the fact is the great capacity is not going to be there. And so these represent prime power applications. Jason, I think, hit on a real key topic. It isn't just about delivering power. It's delivering power with a pathway to deliver better sustainability. So this ability to incorporate hydrogens a feedstock over time, important consideration.

Manav Gupta

Thank you so much, guys.

Jason Few

Thank you.

Operator

Our next question comes from Eric Stine from Craig-Hallum. Your line is now open.

Eric Stine

Good morning, everyone.

Jason Few

Good morning, Eric.

Eric Stine

Hey. So just curious, you mentioned initiatives to speed the sales closure process. I'm wondering if you could just add some details to that. And then just curious, I mean, obviously, you want to add product backlog. So maybe a view of where ideally you'd like to see that end up maybe at the end of fiscal 2024 and how you see a trending going forward?

Jason Few

I'll let Mark give you a little sense about how we're moving projects through our sales funnel and really trying to accelerate what we would call Stage 4, and that's when we're in contracting and 5 is closure. And we talked about a couple of those closed projects this morning that we've done, but I'll let Mark hit on that a little bit, and then we can talk a little bit more about how we think about long-term targets.

Mark Feasel

Sure. There's many aspects to that. But maybe one common denominator is if you think about delivering energy to someone or hydrogen to someone, doing so in a way that transfers risk away from that person. Historically, people have procured gases from an industrial gas supplier and electricity for a utility. Now requiring them to embrace new technologies in order to do that, of course, is always a challenge. It's different than their existing business model. So this can be addressed though via partnerships. And so you've seen us being involved in scenarios in which partnering in energy as-a-service type arrangements where the technical, regulatory and financial risks are transferred away from that end users to a consortium that includes fuels energy and other partners in order to go accomplish that.

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We also think about our ability to deliver with excellence in a specific geography or in a specific market segment. So an example of that may be our partnership that we've announced with Malaysian Marine and heavy engineering in Asia to really help us figure out how to address key customers and concerns in that geography, leveraging their local presence and expertise and ability to scale.

Jason Few

In addition to that, Eric, as you think about it, we've got a material opportunity in Korea through repowering. That's a real near-term opportunity. We talked about we executed on the Noeul Green opportunity. We're optimistic about the opportunities that we see going forward there. And in addition to repowering, when you think about Korea, which is still the largest fuel cell market in the world today, under their CHPs, they've talked about 15 gigawatts of deployment of fuel cell technology, eight of that being in country, seven of that being out of country, really trying to support import hydrogen market for their own domestic use.

But if you think about that, now that we have a platform that today with our solid oxide that we can deploy today in Korea. And as that hydrogen becomes available to switch as the fuel source, that same platform with our solid oxide we can switch to utilizing 100% hydrogen. And we -- again, it opens up the aperture of opportunities where we think that we can effectively compete. And so we're very optimistic about that.

Eric Stine

Got it. And I mean, is it something where you have a kind of a specific goal you think exiting -- exiting fiscal 2024, your product backlog is this? I mean, certainly, you anticipate growth, but is this more of a setting the stage for 2025, 2026, 2027 or do you think that at the end of 2024, you could have a decent amount of product backlog?

Jason Few

Look, we certainly have a target relative to backlog, and building our backlog throughout the fiscal calendar year for us of 2024. And we think these opportunities will play into that. We think repowering is one of those opportunities.

And as we've seen just here recently, the opportunities with our solid oxide platform, and we talked about last quarter, which we're working through contractual terms on a commercial win around leveraging our platform for biofuels in California.

And we think with the growing Biofuel Market, our R&D and our ability to take direct biofuels, again, positions us really well to start turning this pipeline and to close transactions throughout 2024.

Eric Stine

Got it. Thank you. And then maybe just the last one here, and I'm not sure, I think last quarter, you might have provided some specifics. But clearly, now given the setup in South Korea, there is a big opportunity on the service side, any specifics in terms of kind of near-term visibility pipeline? Any details would be great.

Mark Feasel

Yeah. So we are -- if you step back and look at our opportunity in Korea with respect to repowering, we directly sold the opportunity at Costco. And so that one is one that we continue to manage, as we always have under our framework of a long-term service agreement.

We've successfully now been able to repower Noeul Green, which was a project that was sold by our previous partner in the Korea market. And now as those modules came up for replacement or upgrading those modules, we were able to do that and now have the long-term service agreement for that opportunity.

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We see the balance of the Genco's that have our platforms deployed, so call it, 100 megawatts of opportunity as repowering opportunity for us as a company. Now we need to go execute those agreements and come the agreement on LTSAs on a go-forward basis for those opportunities.

But those translate into two things for us. One, its new module sales, because we need to upgrade those modules as part of the repowering and a new long-term service agreement that goes along with those modules that run curtailment, if you will, with those modules. So we see that as a real market opportunity for us. And Mark and his team, is very focused on the repowering opportunity in Korea.

Eric Stine

Okay. Thank you.

Jason Few

Thank you.

Operator

Our next question comes from Ryan Pfingst from B Riley. Your line is now open.

Ryan Pfingst

Hey good morning guys.

Jason Few

Good morning.

Ryan Pfingst

First question is around OpEx. Just wondering how we should think about R&D going forward, as we get closer to commercialization on some of the next-gen tech, does that start to trend lower year-over-year in 2025, maybe up year-over-year this year?

Mike Bishop

Good morning, Ryan, this is Mike. I'll take that question, and thank you for joining the call. So as far as R&D, you have seen it trend up over the last several years, and this is really related to the commercialization efforts that the company is putting into our solid oxide platform, as Jason mentioned, around power gen and electrolysis as well as carbon capture. So it has trended up the targets that we put out for this year were between $60 million and $70 million for that line. So we're right in that range kind of at the lower end of that range. So I wouldn't expect to see a material increase from where we sit today.

Ryan Pfingst

That's helpful. And my second question is, do you have an update on the potential DOE loan guarantee or maybe any sense of timing that you can help us with there?

Mike Bishop

Yes. So we are -- where we look to leverage the DOE loan program opportunity is in two potential areas. One is around expanding our capacity for solid oxide in North America. And as we talked about, we've been doing the work to identify potential new locations, which also may include additional expansion capacity at our existing facility here in Torrington, which would also be eligible for the DOE loan guarantee, if we go that route.

The other area is ultimately what we end up doing around expansion of our carbonate platform tied to ultimately, our view of the carbon capture opportunity. So now there's about a four-phase process that you go through with the DOE. And we are progressing through that process but don't have a specific answer on timing of closure of that as we sit here today.

Ryan Pfingst

Got it. Thank you. I'll turn it back

Mike Bishop

Thank you.

Operator

Our next question comes from Noel Parks from Touhy Brothers. Your line is now open.

Noel Parks

Hi, good morning. I apologize if you touched on this earlier. I got on a little late. But I wondered if you could talk a bit about the ExxonMobil partnership and sort of announced that they sort of formalized making carbon capture technology of choice. And so if you could just talk about maybe the pace of further developments from here as you look ahead?

Jason Few

Yes. Good morning. Noel, how are you doing this morning?

Noel Parks

Great. Thanks.

Jason Few

Yes. So as we announced, that we have reached a point in the work that we've been doing with Exxon to move forward on the Rotterdam demonstration project at one of their facilities. And so the team is working on building the platform and support of that demonstration effort with Exxon. We remain very excited about the opportunity around carbon capture. But the current focus right now is really around the demonstration effort and getting that platform built and ultimately building the demonstration project. And we -- in February, we also put out an announcement around the funding of the order in support of that demonstration project. So we're continuing to advance the program.

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Noel Parks

Great. And this might be a little bit of over-triangulation between various projects you've had. But I was wondering, the Tri-Gen project with Toyota at Long Beach, is there any analogous use case in thinking about, for example, maybe US Gulf Coast and oil tankers, export facilities and so forth? There's a lot going on with LNG there as well on the horizon. Any similar opportunities that you've talked about or had customers approach you about around -- about doing Tri-Gen in a setting like that?

Jason Few

Yeah. When you think about the Tri-Gen platform and, if you just take two of the value streams out of the Tri-Gen platform, setting water aside for just a second, clearly opportunities around power generation for distributed power. And then hydrogen, beyond using hydrogen for transportation, there's conversations around hydrogen for gas blending to help reduce the overall carbon intensity of net gas is one -- another way in which the platform can be utilized.

We certainly see opportunities around ports, especially when you think about the efforts to decarbonize ports and if you just take goods movement on site at the port and the need for a source of hydrogen and power as those things either move to hydrogen as a fuel or electrification as a fuel, those clearly become ways in which our Tri-Gen platform is advantaged to pursue additional opportunities that look a lot like what we're doing already at Long Beach. And probably the most relevant part about that is, right, we now have a reference to show that -- what the platform can do and it's being used in a real commercial application.

Noel Parks

I'm sure that it's a demonstration value for sure, so. Okay. Great. Thanks a lot.

Jason Few

Thank you.

Tom Gelston

And Ellie, I think that's all the questions that we have.

Operator

That's all the questions that we have. I'd now like to hand back over to Jason for a few closing remarks.

Jason Few

Ellie, thank you. We will continue to execute on our powerhouse business strategy with the goal of delivering value to our customers, growth and optimizing returns. Thank you all for joining the call today and for your interest in FuelCell Energy. We look forward to updating you again next quarter. Have a great day.

Operator

Thank you for attending today's call. You may now all disconnect. Have a wonderful day.

**Load-Date:** March 11, 2024

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