

Oklo (OKLO) / 14 Nov 24 / 2024 Q3 Earnings call transcript

Company Profile

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Operator

Good day, everyone, and welcome to today's Oklo Q3 '24 Financial Results and Webcast. [Operator Instructions] Today's call is being recorded. I would now like to turn the call over to Sam Doane. Please go ahead.

Sam Doane

Thank you, operator. Good day, everyone, and welcome to Oklo's 2024 Third Quarter Company Update and Earnings Call.

Joining us today are Jake Dewitte, Oklo's Co-Founder and Chief Executive Officer; and Craig Bealmear, Chief Financial Officer. Oklo's Q3 earnings were announced after market close today.

You can find the shareholder letter and supplemental slides on the Investor Relations page of our website. The information discussed during the course of our remarks and the subsequent Q&A session includes forward-looking statements, which reflect our current views of existing trends and are [not] subject to a variety of risks, assumptions, estimates, uncertainties and other factors that could cause actual results to differ materially from such statements.

You are urged to carefully read the forward-looking statements language in our shareholder letter and supplemental slides.

You can find a discussion of our risk factors, which could potentially contribute to such differences in our most recent filings with the SEC. Oklo assumes no obligation to update these statements, whether as a result of new information, future events or otherwise, except as required by law. I'll now turn the time over to Jake Dewitte, Oklo's Co-Founder and Chief Executive Officer. Jake?

Jacob Dewitte

Thanks, Sam, and thank you all for joining us today. We're excited to share our quarterly update and provide some insights into the progress Oklo has made over the last quarter. Oklo was born largely out of the view that there is a significant opportunity for advanced nuclear technology. What we observed was an industry that had radically stagnated and there was a massive need to rethink about how a company could approach taking new nuclear technologies to market. Oklo has started to take advantage of this opportunity and deliver our mission to provide clean, reliable and affordable energy on a global scale. Jumping up to the next slide on Slide 4. The last quarter has seen big tech make substantial and comprehensive commitments to nuclear as their technology of choice to reliably and affordably power their AI ambitions. The deals with existing nuclear facilities between Amazon and Talen, and Microsoft and Constellation demonstrate the desire to have access to reliable power. These deals have played an important role in establishing a price for baseload low-carbon electricity with some expected to be at or above \$100 per megawatt hour, which supports our discussions with our current and future customers. The small reactor deals announced by Google and Kairos and Amazon and X-energy also demonstrate that big tech is willing to take long-term bets on new nuclear technologies to power their future operations. Oklo signed a similar strategic partnership agreement with Equinix earlier this year for 500 megawatts of power. Equinix also made a \$25 million prepayment to the company for power. We believe that the Equinix deal and other small reactor deals serve as a useful road map for how Oklo intends to partner with data center customers in the future.

Going to Slide 5. Oklo is differentiated from many of its conventional and advanced nuclear competitors because our business model is to build, own and operate our powerhouses and provide customers with what they want; reliable, low-carbon electrons. This graphic from the Department of Energy's Advanced Nuclear Liftoff report demonstrates the challenges of bringing large nuclear projects to market. Large projects with multibillion dollar price tags require risk and cost sharing across multiple stakeholders and customers who don't want to necessarily take those risks. Reactor technology companies sell their partially complete reactor designs and require others to complete the design for them as well as fund and construct those assets. Oklo's technology is small and scalable, allowing us to build, own and operate the plants in a sequenced manner that is expected to reduce risk to all stakeholders. This value proposition resonates strongly with current and prospective customers. It's important to note that this graphic doesn't mean that Oklo will be doing everything itself. The company is building relationships with key strategic partners across our value chain so that we can bring our product to market.

Our deal with Siemens Energy is a good example of what our value chain partnerships can look like.

Going to Slide 6. The nuclear sector continues to receive strong support from all levels of government. This third quarter saw the nuclear fuel sector receive significant funding to construct the infrastructure required to supply High-Assay Low-Enriched Uranium, or HALEU, and an increased pledge at COP29 with 31 countries setting targets to triple nuclear energy capacity by 2050. On Slide 7, we highlight our strategic approach.

Our strategy is centered on 3 key pillars that we believe position us to change the way nuclear power is delivered to customers. We take a different approach across the business model, the size of the plant and technology because we see these are key ways to unlock a huge amount of the potential nuclear has to offer.

On the business model front, our model is designed to make it easy for customers to buy clean power at scale. We couple that with the small reactor size that allows us to achieve greater capital efficiency as a company and to match customer demand incrementally while offering resilient and redundant power solutions to our customers. And that's all coupled with our technology, which leverages centuries of combined experience for technology with economic and operational advantages, thanks to the features of liquid sodium coolant. On Slide 8, we show what we presented last quarter as we laid our framework for how we plan to keep the market up-to-date on our progress, largely in 6 major areas. These span reactor licensing progress, project execution, fuel fabrication and recycling, customer pipeline development, strategic partnerships for corporate and business development and financial updates.

So moving on to Slide 9, we'll show where we made significant progress in the third quarter.

We continued our NRC engagement for reactor licensing and secured key DOE agreements for project execution at the Idaho National Lab, including environmental compliance permits from the Department of Energy.

Our fuel fabrication efforts were bolstered by DOE's approval of the Conceptual Safety Design Report for our Aurora Fuel Fabrication Facility.

On the customer side, we signed letters of intent with 2 major data centers for up to 750 megawatts of power.

We also signed a letter of intent to acquire Atomic Alchemy for radioisotope production. And financially, we carefully managed cash burn and operating expenses to support sustainable growth.

Going to Slide 10.

Regarding our regulatory and permitting progress, we are targeting to submit our combined license application for the Idaho project next year with several follow-on applications within a year's time frame. To streamline the licensing process, we are front-loading NRC review through extensive pre-application work, aiming for a review timeline of about 24 months once submitted. The ADVANCE Act presents significant cost and time advantages for permitting, and we are actively engaged with the NRC to optimize our timeline and maximize benefits as the act takes effect. This includes refining our initial application to facilitate maximum carryover from our 15 megawatt to 50 megawatt designs.

Importantly, the ADVANCE Act accelerates deployment when multiple assets are co-located at one site, which aligns well with our strategy to support customers at a single site.

As mentioned, we anticipate a 24 month review timeline with the NRC to get approval for our first site.

During the application review period, we will also advance site preparation and likely initiate some construction activities in parallel.

We expect to bring our first reactor online in late 2027. On Slide 11, we show the benefits from a regulatory perspective of our integrated build, own and operate business model. We believe that our business model and licensing strategy leverage a streamlined regulatory approach to achieve a combined license, allowing us to secure all necessary approvals to build and operate a commercial plant in one step. Unlike some others in the space and our peers out there who pursue separate construction and operating permits or design certifications and later combined license applications, we go directly to a combined license. This approach aligns with our ownership model, where we build, own and operate our powerhouses rather than selling partially complete designs or licenses.

Additionally, the first combined license becomes a reference license or R-COLA, allowing us to submit subsequent licenses or S-COLAs with a focus only on changes from the original. By keeping these differences minimal, we gain significant efficiency, enabling faster licensing for each additional plant. This strategy not only simplifies the process, but accelerates our ability to deploy plants quickly and effectively. And moving to Slide 12, we show our regulatory path and our permitting progress. To recap, a custom combined license like we're pursuing offers distinct advantages when your business model is to build, own and operate the power plant. With this approach, all regulatory reviews, including siting, design, financial, environmental, operational and security requirements as well as state and local considerations are expected to be completed in a single 24 month comprehensive application. Once approved, you're fully licensed to build and operate. In contrast, other regulatory pathways and business models require multiple steps and more time to reach operational status.

For instance, a design certification only validates aspects of the design itself and still requires additional multi-step multi-year reviews to achieve an operating license, which includes significant remaining regulatory work that needs to be done to obtain a license. Design certification also limits flexibility, a challenge often cited in reviews of lessons learned from the Vogtle experiences. This can lead to needing additional regulatory review in the form of standard design approvals or similar approaches.

While a design certification can be useful if customers are willing to take that back-end risk, it is entirely optional and serves primarily as a risk management step. It's important to emphasize that there is a significant difference then, between obtaining a design certification and securing an operating license.

We continue to make significant progress towards receiving a combined license and the advantage of this approach are increasingly being demonstrated by our customer pipeline development.

Next, on Slide 13, we'll talk about our siting advancement for our Idaho powerhouse deployment. This slide highlights the multi-step regulatory process required for siting approval with the Department of Energy at the Idaho National Laboratory for our plant there.

As you can see, DOE permitting involves several distinct stages, including environmental analysis, site preparation and various agreements for access and services. I'm pleased to report that we made substantial progress this quarter with 2 key milestones.

First, we finalized a Memorandum of Agreement with the Department of Energy which grants us access to conduct site investigations. This is essential for carrying out assessments, environmental surveys and geotechnical studies, paving the way for smooth site preparation.

Second, we secured an environmental compliance permit confirming that there are no significant environmental impacts, allowing us to move forward with the characterization phase. These achievements mark critical steps in our journey towards full siting approval and bring us closer to construction readiness for Oklo's first powerhouse at INL. And moving to Slide 14. I'm also excited to share that the Department of Energy has approved Oklo's Conceptual Safety Design Report for the Aurora Fuel Fabrication Facility. This approval is a key regulatory step in deploying our fuel fabrication facility and advancing our goal to use recovered nuclear material to fuel the first commercial Aurora powerhouse. With this milestone, we're one step closer to realizing our fuel fabrication capabilities. With that, I will pass it to Craig to share customer development updates.

Richard Bealmear

Thank you, Jake.

Moving on to Slide 15. Similar to statements we made last quarter, we have seen a sizable increase in customer interest since the consummation of the business combination in May of this year with AltC, all of which is leading to an increasing customer pipeline. Oklo is continuing to move forward with additional letters of intent with customers, including new non-binding letters of intent with 2 major data center providers for up to 750 megawatts of power. Due to commercial reasons in this instance, both counterparties consider our stage of activity to be commercially sensitive and hence, have requested we withhold their names until a future point in time.

Moving on to Slide 16.

As a reminder, at the time of the announcement of our merger with AltC, we noted that we had over 700 megawatts of business that have been signed through a combination of memorandum of understanding and letters of intent. Since that time, we've made new announcements in the data center market sector with Equinix and Prometheus Hyperscale, as well as an announcement with Diamondback Energy in the oil and gas sector.

With the 2 LOIs I mentioned earlier, this takes our total level of signed agreements to 2.1 gigawatts.

We are already working towards putting in place our first set of power purchase agreements.

While we are actively trading term sheets and PPAs, it is important to note that we are focused on commercial term quality over speed such that we have: optimized pricing potentially linked to fuel price; confirmed location given the impact on cost; partnered with the right customer as we deliver first-of-a-kind projects; assessed the opportunity for investments in Oklo, either at the asset or corporate level; ensured access to other intangibles such as access to their supply chains to support asset deployment.

Jacob Dewitte

Thank you for that, Craig.

Moving to Slide 17, we are very excited to announce that with the support of our Board of Directors, we have decided to fully incorporate Atomic Alchemy into Oklo via an acquisition. The 2 companies have a long history together. Back in 2018, when Atomic Alchemy was founded, I provided due diligence support to venture capitalists to help them understand the potential for radioisotopes. We stayed in close touch with Atomic Alchemy over the years and formed a strategic partnership that we announced earlier this year focused on supporting technology and market sector advancements. Through our work, we have realized that there are massive synergies between our technologies and overall business approach and believe we can achieve more traction on market and technical advancements if Atomic Alchemy were part of Oklo.

Before getting into the elements of the deal, let me walk through some of the basics of what radioisotopes are.

So, radioisotopes are radioactive elements. They are vital materials with growing applications in cancer treatment, diagnostic imaging, space exploration, industrial processes and even advanced semiconductor manufacturing and fabrication.

However, the U.S. lacks a robust supply chain to support these critical resources. Atomic Alchemy has developed proprietary reactor technologies and isotope production technologies to produce radioisotopes that can utilize unique nuclides sourced from nuclear fuel recycling processes for fast reactors and existing used nuclear materials. Oklo's fast fission technology can generate electricity using recycled fuel, which can also produce valuable co-products such as radioisotopes. Through the proposed acquisition, Oklo aims to integrate radioisotope production into its fuel recycling process, creating a complementary revenue stream and strengthening the U.S. radioisotope supply chain. The technology opportunity here has been validated through our work completed under the previously announced MOU between Oklo and Atomic Alchemy.

Moving to Slide 18. Atomic Alchemy is an innovative leader in radioisotopes. Founded in 2018 and initially funded through Y Combinator, Atomic Alchemy launched an innovative approach to radioisotope production to address global shortages and establish a reliable domestic supply chain for radioisotopes crucial to life-saving treatments, advanced industrial applications and national security. Atomic Alchemy has developed its proprietary VIPR reactor technology, which aims to set new standards in efficiency, scalability, economics and operational simplicity for radioisotope production. Atomic Alchemy has achieved significant design, engineering, licensing and permitting milestones towards the initial deployment of its VIPR reactor facility. Atomic Alchemy has also built an attractive supplier and customer pipeline to support commercialization of its operations and its products. And led by a high-quality engineering team based in Idaho Falls, the team is working in close collaboration with the Idaho National Laboratory and the Department of Energy. On Slide 19, we see that radioisotopes are becoming a national strategic priority for many nations. Many countries are recognizing radioisotopes are a national strategic priority given their importance to medical, defense, aerospace and semiconductor sectors. China is targeting economic output from radioisotopes at \$55.7 billion by 2026 and is making strategic investments in the same way that they did with renewable energy technologies and rare earth elements.

Additionally, the United Kingdom is also taking measures to ensure their domestic supply of radioisotopes keep up with demand. With that, I'll go ahead and hand it off to Craig to talk more about the specific transaction.

Richard Bealmear

Thank you, Jake.

Moving on to Slide 20. There have been several multibillion-dollar transactions in the biotech sector related to radiopharmaceuticals, demonstrating market demand for radioisotopes, which is the primary input to radiopharmaceuticals. Atomic Alchemy and Oklo intend to become a premier supplier to this sector as other radioisotope production facilities reach the end of their useful life, resulting in reduced supply.

Moving on to Slide 21 to provide some acquisition highlights. Atomic Alchemy will create significant value for Oklo's shareholders by enhancing the value of our technologies and serving as an attractive stand-alone radioisotope business. We view this as an extremely attractive bolt-on acquisition at the right valuation, which will provide a unique enabler and springboard to enter the radioisotope business, which will be a co-product of our fuel recycling process. Acquisition highlights include the following: complementary technology, radioisotope technologies can significantly enhance the economics of nuclear fuel fabrication and recycling through co-product sales of high-margin radioisotopes. Massive market demand and diminishing supply, the radioisotope market is estimated to be in excess of \$55 billion by 2026, which we believe could achieve rapid sector growth.

In addition, aging radioisotope facilities are causing acute shortages in supply for critical applications across many sectors.

Third, we see a diverse revenue opportunity. Oklo's reactors will generate radioisotopes as a valuable co-product of its fuel recycling process, allowing revenue from both these co-products and existing used fuel. Fourth, growth opportunities. Joint ventures with customers on radioisotope applications, including radiopharmaceuticals and silicone doping for next-generation semiconductor manufacturing.

Finally, we believe this provides an attractive transaction structure. \$25 million acquisition will be funded with stock, priced based on Oklo's most recent 20-day average closing price. All shares issued to Atomic Alchemy are subject to 1 to 3-year lockups with no early release mechanisms. Definitive agreements are expected to be signed in early December with a target close in early 2025. No material near-term operating cost increase is expected for Oklo as a result of the acquisition.

We are extremely excited about what Oklo and Atomic Alchemy can achieve together by pushing innovation on numerous fronts in what we see as a very synergistic transaction. Hopefully, it's clear that this acquisition will create significant value for Oklo's shareholders.

Moving now to Slide 22, I would like to talk about lock-up and earnout triggers, Oklo has met all triggering events we mentioned at our last quarterly call. We would like to take a minute to review.

The first material event is that the 180-day lock-up restriction for some of our investors was released on November 5, 2024, providing them the opportunity to sell their shares in the open market. These investors were 2 early -stage venture capital investors who previously sat on our Board. Their holdings totaled approximately 13.5 million shares.

The second material event is that the time and price-based lock-up restrictions, which applied to the AltC sponsor and the Oklo insiders have all expired as of November 13, 2024. Approximately 41.3 million shares were subject to the time and price-base lock-up restrictions.

As we can see in the table, 40% of the shares were unlocked when Oklo's share price closed at \$12 for 20 days out of 60 trading days. 30% of the shares were unlocked when the share price closed above \$14 for 20 out of 60 days and 30% unlocked at the \$16 trigger for 20 out of 60 days.

Lastly, as part of the business combination, existing Oklo investors and employees at the time of close with shares and vested stock options were offered approximately \$15 million in earnout shares. These earnouts were also subject to price triggers.

As we can see in the table, 50% of the shares were triggered when the Oklo share price closed above \$12 for 20 out of 60 trading days. Roughly 33% of the shares were triggered when the share price closed above \$14 for 20 out of 60 days and roughly 17% triggered at the \$16 trigger price for 20 out of 60 days.

Our 2 co-founders have elected to forfeit 300,000 of their earnout shares, which may be issued as an equivalent number of restricted stock units to certain employees pursuant to our 2024 Equity Incentive Plan.

Moving to the table at the right, we can see the changes to our overall capitalization. We ended the second quarter with approximately 67.2 million shares in our tradable float. The release of the 180 day lock-up restrictions added 13.5 million shares to the tradable float on November 5, 2024. Unlocked sponsor and Oklo insider shares added 41.3 million shares to the tradable float. Earnout shares added 14.7 million shares to the tradable float. Lock-up expirations and earn-out shares bring Oklo's tradable float and total capitalization to a little under 137 million shares.

Moving on to Slide 23 to provide a financial executive summary. Year-to-date, Oklo's cash used in operations sits at \$24.9 million, made up of a net loss of \$63.4 million, partially offset by \$38.5 million in non-cash impacts. Year-to-date operating loss of \$37.4 million included a one-time fair market value adjustment of \$7.8 million related to earn-out shares payable to Oklo's staff who held vested options at the end of deal closure. At the end of third quarter, cash and marketable securities were \$288.5 million, primarily driven by the \$276 million in proceeds net of fees received at deal closure.

Our full-year 2024 operating loss is still expected to be in line with our prior guidance of \$40 million to \$50 million that was noted in our Super 8-K filing.

Moving on to Slide 24. Post the filing of our 10-Q for third quarter, we are looking forward to several upcoming investor events to close out the year, including events in Scottsdale, New Orleans and New York as well as several virtual events.

Finally, to close, why Oklo? We believe there are 6 factors that make Oklo such a compelling investment proposition.

First, technology in size that is based on a proven fast reactor approach that we look to deploy at scale to reduce complexity, cost and time to delivery.

Second, an attractive business model that is customer-oriented and enables recurring revenue and profits.

Third, superior economics that look to deliver power and very competitive levelized cost of energy. Fourth, a diverse and growing customer base with interest across 6 market sectors. Fifth, a streamlined approach to regulatory approval, underpinned by our combined licensing application process that leverages years of experience in our work with the NRC. And finally, a well-capitalized balance sheet that positions us well for the implementation of our business strategy. In the last year, it feels like the world has moved from why nuclear to why not nuclear to nuclear now. We believe the 6 points I noted leave Oklo well positioned for the world of nuclear now. With that, I would like to thank you for your time. Jake and I will now open up the call for questions.

Operator

[Operator Instructions] We'll take our first question from Ryan Pfingst with B. Riley.

Ryan Pfingst

I guess for my first one, have the announcements from the tech giants recently led to an increased customer interest in Oklo and is it may be accelerating certain customer discussions? And when might we see the first contract conversion from an LOI to PPAs? So, a couple in there, but appreciate it.

Jacob Dewitte

Yes. Thank you. It's a great question. This is Jake, by the way.

I think it has accelerated.

I think we've seen a steady pace of acceleration, I should say, a steady rate of acceleration really for some time. We kind of set the market here with the announcement -- with the partnership we have with Equinix for 500 megawatts that included their \$25 million prepayment back in the spring, and we've seen just progression continue. And with the announcements from the Microsoft-Constellation deal now, then the Google and Kairos deal, the AWS-X-energy deal, there's just this pace of increase that's happening and a rate of increase there. And I think what is changing the tone towards though is getting more and more towards recognizing that power is one of the biggest bottlenecks on data center deployment and some of the things in nuclear, especially what we're offering in terms of the business model and our sizing and our siting flexibility accordingly, opens up significant capabilities and flexibility for data center development as they think about what their scale and their plans for scale are.

I think additionally, when we look at one of the indicators for what's expected here, there's a lot of eye-popping numbers about power demand, but we're seeing it supported by what the semiconductor producers are making as kind of maybe a leading indicator, right? They see this enough to invest and produce and to support kind of where these power scales are moving to.

And so it's a pretty exciting kind of -- I mean, it's just an insanely exciting time to be really frank. I don't think there's really been a dynamic like this in the world of electric power generation since the advent of electricity.

So we see that definitely occurring. That said, everything as a result of that creates a lot of valuable dynamics to build long-lasting strategic partnerships between us and our customers, and we're seeing that growing and evolving. And as a result of that, our acceleration to sign PPAs, like it's not as relevant to do that in terms of a pace to do so, like rushing to do so as it is to build the right partnerships and the right frameworks for those folks and find the right ones to move forward with. Not to mention that, as this is going, I think we're getting more clarity on what the actual market pricing is for nuclear power. Clear signals, as Craig was talking about in the presentation, is for \$100 or more megawatt hour.

We expect that to continue and sustain itself going forward.

So, for us, we are intentionally making sure we build the best partnerships we can with the best partners to drive that forward rather than rushing right into PPAs, just given all the other dynamics in terms of deployment as well as developing those partnerships for more potential value add to the whole business as we can.

So I don't know, Craig, if you want to add anything, given some of the dynamics around that, but that's kind of how we see some of those dynamics evolving.

Richard Bealmear

No, Jake, I think you nailed it.

Jacob Dewitte

And the one thing I'll just add is, like we announced yesterday, I mean, we announced those agreements and those partnership agreements, people want to move quickly and -- I mean there's a lot of exciting things happening.

So I think one of the things we really see is good validation of kind of our differentiated approaches or with our business model, kind of our time-to-market advantages, all of those things are lining up to support some of those activities to be more constructive to near-term power deployment, which is also a pretty exciting thing to see coming together.

Richard Bealmear

Jake, maybe one thing as well. It's great to have the data center customers in our order book, but it's also -- we're still glad that we've got diversity in our order book across a number of other market sectors as well.

Ryan Pfingst

Got it. Appreciate that, guys. And then just for my second one, could you give your high-level thoughts on how the changing political landscape might affect nuclear and Oklo's opportunities specifically?

Jacob Dewitte

Like the broad, just nuclear competitive landscape?

Ryan Pfingst

Yes. Nuclear obviously enjoys pretty nice bipartisan support. But just with the change in administration, are there any additional benefits or changes that you might expect to see?

Jacob Dewitte

Yes.

I think we see -- I mean, I think, it's been pretty clear the support has been bipartisan, like you said, between whether it was going to be a Trump administration or a Harris administration and a Democrat or Republican Congress. And I think what we've seen is levels of support on the nuclear side continue to ramp up across the board from, frankly, one administration to the next to the next.

I think we see a lot of focus on continued roles of regulatory modernization going forward, which I think will be particularly enabling for more and faster new nuclear. I also think you're going to see some evolution. Obviously, it depends on a number of factors, but of the different support mechanisms on hand, given that nuclear has a lot of bipartisan support, I think any modifications or developments that happen with like the Inflation Reduction Act or different structures like that out there, I think you're going to see that support continue for nuclear. That said, it depends on what happens, right? But when you read the news, it's possible that there's maybe a reduction in some of those benefits to non-nuclear sources of generation.

So, that will kind of shift some of those, I think, implications and dynamics accordingly.

The other part of this, I think is, I think we see some interesting dynamics on the kind of gas power generation side. And I actually think there's a lot of opportunity in the gas to nuclear combo that'll be in play for data centers, sort of the gas bridging to nuclear.

So I think there's some interesting opportunities that will continue to emerge there. But at the end of the day, like, we see a lot of constructiveness to nuclear policy as a whole here, probably with a heavy focus on regulatory as well as amplifying and accelerating the levels of support that we've seen already in place.

Operator

And we'll next take our next question from Vikram Bagri with Citi.

Vikram Bagri

Thanks for the thorough review of developments at the company. I have 2 questions, one on Atomic and one on Oklo. Can you talk about the response from hyperscalers regarding the size of reactors and you have plans to increase the size to 100 megawatts and higher. Where are we in that process? And do you see an opportunity to expand the pipeline meaningfully once you have more details and a design ready for a larger reactor?

Jacob Dewitte

Yes.

I think just on the size part, I think it's -- okay, so it's kind of an interesting strategic advantage given our sizing.

I think the way to think about this is while there's eye-popping big numbers in terms of like, oh, data center campuses being multi-hundred megawatt. And I think we're going to see convergence more and more into the multi-hundred megawatt data center campus size.

You got to think about how these things are built, which is quite modular. And the data halls that are building out these things, what we're finding talking to a number of different customers, seeing a number of different architectures, is a size range that matches quite well with what we're offering. We're seeing more of it offering and matching the 50-megawatt size. That's [tense] how we're thinking about that driving a lot of the growth here. But that's important because when you think about these data center campuses, as they build out, it's nice to be able to build out incrementally with them as these things scale up and out from a power generation side. And then additionally, that allows us to site multiple units to offer the right kind of reliability and resilience. That's ultimately quite critical, especially in the wake of different dynamics following sort of the FERC ruling and other implications that may exist at the sort of local and state level energy market regulatory paradigms, which may heavily incentivize, like really significantly incentivize near-term deployment in more of an islanded mode behind the meter. Obviously, a lot of that's evolving still. But that said, having multiple reactors reduces single shaft risk and our deployment strategy allows us to build up in parallel without having to overhang all that -- a bunch of fixed capital to accommodate that growing into it.

So our sizing is actually quite well suited for that. And if you look at the announcements that have been in the space, they've been largely constructive for new builds of plants in this kind of size range. Nice thing then is, of course, our business model differentiation, which is super important, making it easier for folks to buy what we're offering. That said, we also see -- like, to your point, there are some opportunities for getting bigger and that's always been part of our road map. Counterintuitively, we don't see that there are the same economy of scale drivers that you see in light water reactor, a pressurized system technology.

So, there are some cost optima at certain size. I shouldn't say cost optima, there are some cost thresholds at which -- above which you turn -- transition into becoming marginally more expensive due to the bespoke and non-recurring engineering costs of larger and larger plants, the same things that plague large-scale mega projects.

So, we see a sweet spot there that's going to be north of 100 megawatts probably.

So that will kind of follow. But we see a lot of traction, hence what we've talked about and announced is heavily focused on the 50 and support for the 15 as well with respect to the sizing.

So, we see quite a bit of, I think, constructiveness on that size and the full-in power solution we're offering, because you got to think about the full power solution, not just the per reactor power basis. And that's what we see on the plant level being quite constructive.

Vikram Bagri

Very helpful. And then moving on to Atomic. I was wondering like how big this business could be? And I realize I'm jumping the gun here, but is there a per reactor formula linked to fuel recycling that we should think about longer term based on how Atomic grows with number of installations you have? And then in the near term, is there an independent revenue stream that Atomic could participate in before the complementary fuel recycling growth with Oklo that you highlighted? And then on the same topic, if there is, when do you think we'll see some partnerships or pipeline of orders being built on Atomic site?

Jacob Dewitte

Yes. No, thank you for asking those, Vik, and digging into that.

I think this is an exciting one, that kind of a bit -- I guess, is a little bit borne out of the long-term familiarity we've had with the business, and honestly, supporting a lot of venture capital investors looking at the business and wanting to talk to me about it and having done similar support for a number of medical and radioisotope companies just kind of at the different levels of maturity and development. It's a space I've long been excited and interested in. Obviously, we're super pumped about kind of the core vision of Oklo. It's hard not to get motivated by a technology that can truly be a terminal energy and climate solution set. But we saw a lot of constructiveness the more time we spent with -- I'm sorry, a lot of complementariness, the more time we spent with Atomic Alchemy to some of the things we're doing with respect to expanding our fuel supply chains. The ability to monetize the co-products from recycling and not have to develop those sales channels and leverage some of their technologies to actually separate those into sellable products is great. We don't have to do that then.

So there's a natural harmony there that then just is what sort of, in many ways, set the hook here to be pretty intrigued. But what we see as additional opportunities is because of what's happening broadly in the radioisotope space.

I think the recent announcements that we highlighted from -- just in the last like week or 2 about China and making this a geopolitical priority and extract -- basically projecting a \$55-billion-plus impact in 2026 to their economy for this gives you a sense that there's some massive geopolitical and therefore, economic implications of the radioisotope space, and we are woefully underserving this domestically in the U.S. as our reliance has been significantly based on Russia to-date.

So there's a whole reinvigoration going on here. And you see this manifest, obviously, the radiopharmaceutical side, you have a lot of activity there, including some exciting M&A activity that's happened in the last few years around very promising treatments. Couple that with then also activity we've seen from our peers in the space, whether it'd be TerraPower or BWXT, seeing these as opportunities to grow into. It's a big market space.

Now, for those of you who follow minerals and pricing of commodities, this stuff could be kind of opaque, but it is some of the most fun pricing to look at because you see some of these elements and these isotopes fetch market pricing of billions of dollars per gram. We obviously don't produce that many grams, not even a gram of some of these things. But it's a clearly high value piece, so it's pretty exciting what that looks like.

Now what's important to also highlight is there are opportunities for sort of, radioisotope production that we saw with Atomic Alchemy, we'll be talking more about, but just a little like, post closure of the transaction, should that all occur.

Some of those pieces, though, are pretty interesting from, I would say, like opportunities to bring in radioisotope sales before having some -- like, for example, our full-scale recycling facilities operating and even before them having some of their other facilities operating, there are some near-term opportunities, accordingly, that we're pretty eager to be digging into and exploring that are part of what we see as compelling about potential revenue stream acceleration.

So that's kind of how we see some of those pieces of that. I don't know, Craig, if you want to add anything, but captures a few of these things.

Richard Bealmear

Yes, Jake, I think the word I would use is stand-alone that Atomic Alchemy has got near-term and potentially long-term stand-alone capabilities to produce isotopes. And the other thing, I think, quite complementary, it's actually one of the things that got me excited about Oklo when I joined the company 1.5 years ago is, we've always taken a customer-oriented approach around building -- selling power to customers because that's what they want. And I think what excites me about Atomic Alchemy is, if they -- the near-term production capability that we may have means that we'll have near-term market access. And as these markets are developing for these isotopes, I think we're at the early stages for that. With Atomic Alchemy, we can be part of that near-term market development. And then as our recycling business comes online and we'll have additional supply, we'll be that much better positioned.

Operator

And we'll take our next question from Jeffrey Campbell with Seaport Research Partners.

Jeffrey Campbell

Jake, a very good. Really enjoying it. I'll ask an AA question as well. I was wondering if Oklo's ability to recycle nuclear waste at pennies on the dollar, will provide any margin uplift or advantage for AA and its various radioisotope applications?

Jacob Dewitte

Yes.

I think I'd give an answer kind of around some of that and definitely, Craig, feel free to jump in, too. I mean, I think what we see is the way that there's some opportunities on how these are complementary aspects of the business is. When you think about what recycling is, you have multiple, I'll call it, sort of product streams, right? And products include services to some degree here and what I'm going to say. But from the recycling perspective on the business, you have the ability to take in used fuel. And then when you recycle it, you're breaking it into different constituents. Those are largely the fission products, the byproducts of fission themselves. The transuranics mixed up with some uranium. Those are things like americium, neptunium, plutonium, uranium, so on and so forth that are at the bottom of the periodic table and to the right and then just pure uranium. We see opportunities for sales of all of those products. The transuranic uranium and uranium parts are what we use direct to fuel in our systems. There'll be some unused uranium that could be potentially sold into the market. And then on the fission product side, while a lot of those are, frankly, a waste stream, there are some high-value radioisotopes in that, and that's what sort of was some of the initial partnership dynamics that formed between us and Atomic Alchemy that ultimately led to this, is how to then pull those, separate them, package them and put them in the right sales channels.

And some of the revenue -- some of the like revenue potential for that is quite significant for the recycling facility as well as then the benefits of actually consolidating the waste and all the things that come from reducing its size and all those other factors that recycling gives you.

So that opens up a number of revenue streams. And we see the co-product sales as a pretty significant one because that market is pretty clear, right? Radioisotopes are bought and sold around the market today.

So a pretty clear one to be able to take advantage of, if we were to otherwise just be throwing this stuff away.

So that definitely will contribute and add additional revenue streams. And look, there's -- as we get more and more into the recycling story of the business as we grow, what we'll be talking more and more about is all the different revenue knobs that may exist to turn and sort of what that does will just further help reduce the costs of those facilities, if you will, that are ultimately borne by us on the fuel side.

So yes, there's potential to further reduce costs.

So it's kind of a roundabout way of answering somewhat on that. Craig, I don't know if you want to get into anything more on that. If there's anything you're curious to dig deeper on.

Richard Bealmear

Well, the other thing I just like about the recycling business, and that's why we use the word co-product in that byproduct is it's going to produce things that we're going to be glad to have and monetize as a co-product, whereas like when I was selling asphalt for BP in Europe, that was definitely selling a byproduct, like what are we going to do with it.

So I think there's huge margin upside as we get recycling up and running. And I think now that once our deal is complete, I think we'll find all sorts of additional synergy points between Oklo and Atomic Alchemy.

Jeffrey Campbell

Okay. Great. No, that was very helpful. Jake, you added excellent color on the [COLA] license process. To clarify, do you view each subsequent Aurora application taking the same 24 months as the first? Or could it be quicker? And if so, how quick? And also, do you think once the first powerhouse is up and approved, that it will be possible to apply for multiple COLAs simultaneously?

Jacob Dewitte

Yes. Actually, so to answer your question in reverse order, we could actually have multiple applications in review at the same time. They don't have to wait for the first one.

In fact, we anticipate having multiple applications that follow in relatively short order after our first one is in -- before that first one is issued. That's a really important strategy that we have to be able to scale up elements, scale up deployment across the business.

So in other words, just to summarize that, we don't need the first one to be approved before we submit additional ones. And there is some timing benefit of having a staggered parallel review going on for those subsequent applications. That said, the real benefit to get to the first part of your question is on those subsequent applications. This is one of those features that's embedded in the regulation that's really exciting, that was actually kind of envisioned for this model of repeatable deployment that we're just maybe going to be one of the first ones to actually fully take advantage of. It's this reference license, subsequent license dynamic. In other words, your first plant you get a license for, becomes your reference combined license.

Your second, third, fourth, everything beyond that can become the subsequent license that references that actual reference first license. And the NRC just in the last few months, issued a white paper outlining subsequent high-volume deployment pathways, leveraging this approach where they projected being able to get the total review times for those subsequent licenses down to 7 months.

So from time to submit to time to approval is as little as 7 months. I mean that's a game changer, not just in nuclear, but that's faster permitting for pretty much anything on energy in many ways. And that's pretty dang exciting, frankly.

So -- and that's what we've been building towards. We've heard numbers that range in those levels, but it was really exciting to actually see some clear things come out in terms of how that could be achieved. Again, I mean, there's aspirational dynamics to that, and that's not what we're going to realize on our second wave of applications necessarily. But I think we expect significant acceleration in that second wave and maybe even hitting to those numbers by the time we kind of hit the stride later in that second wave into the third wave. And what I mean by waves is like submitting applications after we've largely gotten that first one either proved or approved and the ones that kind of come after that.

So we see some acceleration benefits pretty quickly and then some significant acceleration benefits down the road.

Jeffrey Campbell

Now, that's really great. And that helps to make this massive backload of LOIs that you have feel more tangible.

So I appreciate that.

Operator

Our next question comes from Max Hopkins from CLSA.

Maxwell Hopkins

Many of my questions have already been asked. But I guess on the construction side of things, 2 there. What's the time line for, I guess, groundbreak on Idaho? Obviously, that was announced last week or weeks before. And then with that, are there specific citings, I guess, issues for earthquakes, water, accessibility and everything in all the sites you're looking for that could potentially change how you cite things?

Jacob Dewitte

Yes. I mean, generally speaking, it depends a little bit on various elements on the specifics on the regulatory review plan and all those other details. But we anticipate that there's opportunities to break ground as soon as 2026 for that Idaho plant. It depends on a couple of factors that we'll have to optimize to for all the various reasons you need to do that from a project and asset management optimization perspective, but that's when we'd expect to be able to do that. Generally speaking, one important thing is given how we're approaching the plant and the nature of how you consider what's sort of in the safety envelope and what's not and things like that, there are elements that allow you to do a lot of parallel development and construction while the license is under review within the right scope and bounds, of course, but that's something that we can use to deploy things accordingly.

The other dynamic in terms of like where we're at in Idaho is, we outlined this in the slides, but yes, there's a lot of steps to kind of progress this into full build-out because this is on DOE land, which is great because it's well understood land.

We have access to it. And we get fuel with it, right, as part of -- I mean, not with it, but we get fuel there as well as part of what we got in 2019 with the site-use permit as well as the fuel award. That said, we got to follow, obviously, the DOE regulatory protocols about that facility to get the site ready to go and then also the NRC regulatory requirements that are part of the ultimate license to turn the -- build the plant and turn it on commercially to operate. But all these things are kind of progressing forward. Generally speaking, just to go back to that, these sites are extremely well characterized because this is on the Idaho National Laboratory. We're not far just down the road, frankly, from where there's already an operating react -- 2 operating test reactors and where EBR-II operated before.

So all this land is well characterized, and that's one of the reasons we like it.

So obviously, there's still work to do to fully get into build and everything else, but that continues at pace, and we're pretty thrilled by the progress made so far, and know that there's some inherent risk mitigation just by working with the government on already well characterized and understood land.

Maxwell Hopkins

And then I guess a follow-up to that in some sense is these announcements from competitors, they're kind of thermal neutron versus fast -- your guys' fast neutron reactors. Are you guys seeing slower progress or I guess, customer questioning given your guys' fast neutron reactor type and the potential, I guess, for more proliferation from that technology. Is that a concern for clients and it might be potentially dangerous from that sense?

Jacob Dewitte

No because -- no, that's. I guess, It is not. I mean this is one of the beautiful things about Fast Neutron technology. This is -- so okay, let's just kind of run through kind of a quick history on some of these pieces, right? Initially, fast neutron reactors were envisioned for their significant potential on fuel efficiency, right? Slow neutron reactors, just because what happens, right, is neutrons are born going fast from fission, they just are.

So you slow down in slow neutron reactors to make them easier to catch, so you need less fuel to run. But you can't get that much energy out of the fuel because the slow neutrons are far easier to intercept by the byproducts of fission itself, like fission products -- like these fission products as well as other materials in the reactor and everything else. They also aren't very good at fissioning very many isotopes, really only a few fissile isotopes.

So you get a lot less energy and you're a lot more susceptible to significant challenges on the fuel side in terms of the ability to run for longer and be able to even recycle, you cannot do that in a slow neutron reactor. In a fast reactor, you don't slow those neutrons down.

You need more fuel, but you have the benefit now of allowing for much better material selections that are cheaper, that are better, that are just more resilient. There, you have the ability to also be relatively impervious to these kinds of fission products as well as be able to actually fission a lot more of the actinide so you can actually recycle fuel and comprehensively get a lot more energy out, right? So just to use one metric, if you look at today's reactors or most slow neutron reactors, the amount of energy they get out of the uranium they pull out of the ground, right, because you have to enrich it and you leave some uranium on the side as you enrich it. By the time you account for all of that, you're only extracting 1% or less of the overall energy content of what comes out of the ground. With a fast reactor, you can actually extract -- you can get at more than 90% of that energy content.

So that translates to massive long-term fuel savings and economic efficiencies as well as just deconstraining yourself on fuel availability. But on the safety side, there's also an important aspect here. Fast neutrons are tightly neutronically coupled systems. And what that translates to are systems that are quite robust and quite stabilizing when you design them in a way that takes advantage of those features. This has been done before, and it's one of the only -- it's really the only technology that in the U.S. has actually demonstrated these capabilities in a comprehensive safety manner. From a proliferation perspective, look, no commercial fuel has ever been used or plant fuel has been used from a perspective for proliferation. Fast neutrons are actually far better at consuming things like plutonium and transuranics than thermal neutron reactors.

So there is no inherent proliferation sort of challenges unique to fast reactors versus other things from how I look at it. The -- I mean, just from what the physics are. And the reality is they're actually quite antiproliferative. And that's one of the nice things about recycling as we can do that you can only do with a fast reactor, which is actually keep all the transuranics that includes plutonium mixed up, commingled and therefore, really, really not usable in any direct way.

So that then when you can put it in a reactor and just burn it like that without having to go through additional steps to further refine it and purify pure plutonium, which is what you need to do to be able to use any kind of recycling in a thermal reactor and even then you get limits on what you can do.

So that's me rambling for quite a while, but the reality is -- technologically, it's actually -- as we see it, a pretty competitive at least, I mean, frankly, just a superior solution in many ways with a deep history of maturity behind it. And that's why we see the multitude that we have, like we have a versatile customer -- diverse customer order book that we've obviously talked about and announced 2,100 megawatts to-date.

So a lot of exciting things happening there with good validation on that front. But look, there's a lot of different features that different types of technologies and approaches offer, and we think the market here is massive.

So there's probably going to be multiple winners. But the nice thing we have is we have the only technology that's actually -- that's a non-light water technology that's demonstrated out some of these characteristics and capabilities. And it's the only technology that's in many ways, actually proven out some operational histories that have outperformed light water reactors operationally speaking, in terms of capacity factor and availability factor. All these other kind of next-generation concepts have a lot more work to do to kind of get there.

And so we see a lot of value in that piece. Not to mention, we're trying to build this not just for like optimizing where we're at in a couple of years in terms of, oh, build some plants, that's great. Look, this is a technology that's fundamentally been demonstrated and proven on the fast reactor and recycling side that can tap into known harvestable right resources of heavy metals on the planet and power the entire planet's energy needs for billions of years. I mean, are we -- yes, that's going to take a lot of work and a lot of things to actually get there, but we know the physics is on our side. Easy to get excited by that and feel pretty good about that, and that's part of why we like this approach.

Maxwell Hopkins

Awesome. It clears a lot of things up, I think, for many of us.

Operator

We'll next go to Craig Shere with Tuohy Brothers.

Craig Shere

Congratulations on the very positive announcements. My first question, if I understand it correctly, ultimately, looking into the late part of this decade, early 2030s, fuel recycling is going to ultimately need some potentially sizable external capital raise to fund that effort. Do you see the Atomic acquisition commingling helping to increase prospective low-risk project finance for such an undertaking?

Jacob Dewitte

Yes. I'll just start with a little bit, Craig, feel free to chime in. I mean, so what we see is recycling is, first of all, just -- we see this as a big catalyst and enabler for growth and for margin enhancement. It's not a thing we have to do to exist.

So it's just something that, look, if we can reduce our fuel cost by over 90% or so, that's pretty compelling. Not to mention add additional revenue streams and pieces like that. But as we structured kind of when we -- the transaction, the SPAC going through with AltC and how we thought about the capital retained from that and everything else, focuses on getting through our first plant built and beyond, knowing that in the recycling part of the story, we really didn't try to capture either in the valuation part of it or really in the core elements of that because you're not going to see some of those benefits until a bit later.

So we think that has a lot of upside that remains there to be, I'll say, potentially tapped into. And accordingly, as that matures and comes together, yes, there may be opportunities where we go back to market to support what that looks like, but that's going to be largely supported by the additional growth accordingly that comes from that. And part of why we see there's some synergies with, for example, Atomic Alchemy is helping to prove out and verify some of those radioisotope sales channels accordingly so that there's some offtake examples that can be used to sort of support the economic case of why we would do that and then the according value add that we think can be made accordingly.

So that's how I think we think about some of those dynamics. I don't know, Craig, if you want to add anything on that front, but that's kind of how I see it.

Richard Bealmear

Yes.

I think the only thing I would add is, I look at the recycling business as kind of having 3 sources of value. One is the value it brings to reduced fuel cost. Two is our -- we may potentially be able to extract rent by storing the spin fuel that needs to be recycled. And last but certainly not least is the co-product production of the isotopes. And I think as we have a better view on what a buildup of that recycling business looks like following all the work that we're doing with the DOE, I think it will be -- we've always said that, that would be a separate fundraising event for the company, but I think we'll have a lot of sources of value to point to that hopefully should give us a lot of optionality around the fundraising, including potentially project financing.

Craig Shere

Great. And then my second question, it's kind of tied to a 3-parter.

So across data centers, oil and gas, industry, and military, how do you think about the mix of your first 5 to 10 powerhouses? Do you intentionally want to diversify your mix versus concentrating with any single industry or counterparty that may be paying a higher PPA price point today? And finally, how do you see the mix over the first 5 or 10 deployments roughly in your mind today across the 15-megawatt versus 50-megawatt applications?

Jacob Dewitte

Yes. I'll start and just say, I think the diversification is a valuable thing to have.

I think there's 3 macro trends, right, that are catching all this excitement about new -- just new nuclear builds and AI and data centers clearly dominates that. But even before that, there was actually, I think, a couple of major macro trends that were kind of carrying the day, too.

So all of these -- and they're all constructive to each other and complementary. But broad efforts on energy transition, you see people talk about needing 2x to 3x more electric power generating capacity just to support electrification as we strive for that across transit and domestic use and all these other things.

So that's one big drive, of course.

I think another drive is what we're seeing happening on the reindustrialization perspective. There's a lot of factors that I think have dictated where we saw electric usage and demand, therefore, kind of be relatively low growth for a couple of decades in the U.S. But one contributing factor there was the sort of offshoring of a lot of manufacturing capacity and the jobs associated with that.

As we see increasing dynamics to drive that back into the country, they need -- factories need baseload power. They need 24/7 power and across all the different verticals, ranging from semiconductors to paper mills, oil and gas production, all these different industrial use cases.

And so that's another big driver as we see that occurring kind of supportive of this as well. And we see that being something that's going to continue. And we think from various market perspectives, those are giant markets as well. In some cases, they aren't moving as fast as data centers. And I would argue that in some cases, some of those are a little bit more better -- I would say the 15-megawatt solution better suits a number of those, not all of them and it's a mix. That's why we see the need for both of those, whereas we see on the data center side, a lot more pull on the 50-megawatt piece. But yes, we think it's pretty important to kind of support those things. But we also recognize that data centers are going to be moving faster.

And so some of the near-term deployments are likely to be sort of more data center focused. But from developing relationships and developing business partnerships, we see a lot of support on the sort of the diversified deployment by customer models, and that's why we've tried to do that, and we'll continue to build that up accordingly.

Operator

We'll take our next question from Ivan Feinseth with Tigress Financial Partners.

Ivan Feinseth

Congratulations on the great progress and the acquisition announcement today.

So focusing on the opportunity for getting into other industries and maybe is there opportunities for like co-R&D development partnerships? And in that case, what do you feel your value proposition would be to working with some of the companies in biotech or pharmaceutical or semiconductors?

Jacob Dewitte

Yes.

I think -- I definitely think that's a possibility.

I think one of the things we see as enabling here is our ability to share some of the kind of capabilities we have to help accelerate Atomic Alchemy, and then similarly, what they bring to the table to help accelerate on their side to ultimately be able to scale into these markets and deliver, which opens the door for a lot of different things.

I think right now, we're seeing on the value chain on the radiopharmaceutical side, a lot of focus on the potential of these radiopharmaceuticals. We're so early in the game on this, and they've been so severely supply constrained that the more -- as this kind of, I would say, pull on the market continues to grow and accelerate as more and more of these drugs kind of hit the market, you're just going to see a big pull up on the supplies. That's I think one of the things we really like about the Atomic Alchemy play is a diversified approach on radioisotopes actually, too, not just to focus on sort of the big name gitters like Lutetium, or Actinium or [Mol E], like we're looking at a number of different isotopes that they can be well produced to supply to. And as you open the door for even more of those, you're going to just see even more pharmaceutical development. Because right now, one of the big constraints even on R&D is the lack of availability.

So I think we see a lot that comes from that. And then there's strategic partnerships that come accordingly from a totally different pool of folks because of what you can supply here, which I think is neat. And you hit on one point on there is the semiconductor side. And this is something that still really exciting to me because it's pretty significantly underappreciated, but it's some of the benefits that neutron transportation doping can do for silicon doping for semiconductors. In many ways, it is one of the gold standards with respect to taking silicon ingots and doping them up for just better semiconductor fabrication and manufacturing. And reactors are the best way to do that.

And so when we think about state-of-the-art kind of best high-quality semiconductors or really, I should say, silicon input into semiconductors, this is a pretty interesting opportunity space there.

So yes, I think there are some dynamics that evolve there. And this gets back -- I know it's just quickly kind of -- there's a question I feel like I didn't answer very well before, but where do we see pipeline announcements and all these other things as we get through the transaction, I think you'll see -- we'll see how those develop and how that continues to develop as well. And I think there'll be some offtake developments that occur over the course of the next year or so with the Atomic Alchemy offtake streams.

Ivan Feinseth

Because Slide 20 really shows some significant investment from Bristol-Myers, Novartis and Eli Lilly into this area.

Jacob Dewitte

Right. And I think what we see is as we -- as this continues to mature and develop, you're going to see I think the maturation of this to the point where you can really attractively attract some of those partners in the right way to be even more constructively engaged. I know just from the diligence side of providing sort of being a reference point for Atomic Alchemy and some others in the space before talking to some folks from the big pharma companies who are looking around and watching the space, but I think waiting for a couple more pieces to come in before they start to sort of jump to partner, but it feels like it's largely just a function of sort of development and inevitability, which brings them to the table, which is part of what planted the seed that this could make a lot of sense to help accelerate into those opportunities potentially.

Ivan Feinseth

Looks very exciting. Congratulations again.

Operator

We'll take our last question from Pavel Molchanov with Raymond James.

Pavel Molchanov

Let me go back to one of the earlier points about the SMR competitive landscape.

Given the sheer number of new entrants in the space, do you find that prospective customers are getting confused or bewildered just by the scope of offerings that are out there and trying to differentiate between them?

Jacob Dewitte

I think at times, I think what we've seen though is a lot of these folks are -- a lot of the customer side here are getting pretty savvy on the different opportunities, and they're talking to a lot of different groups. I mean I think, yes, and there's a mix. There's a spectrum, right? And I think at the end of the day, there's some, I'll call it, frothiness in the space. And I think that's a good indicator of innovation and a good reflection of that. But look, I think this is where we see differentiation from a number of perspectives being to our advantage and how we've seen validation of that from the customer side.

I think we were one of the first out, right? I mean we were the first out with the data center deal with Equinix.

So like months before everything else, it kind of reflects some of that validation point. And for us, we really like that approach and that model because this keeps versatility and flexibility with our partners because of the COLA model and who they serve.

So we don't -- you can imagine that sometimes hyperscalers know they have a lot of leverage in a dynamic and might want to lock in some things that prohibit your ability to be flexible. That's -- there's ways that you can then find more versatile partners, and that's one of the things we really liked about what we have with Equinix and then the others we've announced and talked about. That said, we see like -- I think what we see is some of the signals that we think are pretty powerful that have been purpose-built for how we've started the company and grown the company are built around the ability to position ourselves to be one of the early movers and largely make the solution for the potential customers easy. We're not needing to have a bunch of complicated partners and teams and dynamics that our customers have to be involved with and push a lot of the work on them, all these other factors that just make deployment more challenging. Instead, we bring that in-house, we do that in-house. It's more work for us, but it makes it easier for our customers, and that's what I think a business should try to do is make their products a little easier. It's funny -- when you have people that want to buy your product, you make it so hard to sell, they can't buy it. It's so hard to buy it, it's hard for them to buy it. It feels like there's a lot of room for just easy disruption there. And that's -- it's not easy, but disruption to make that easier, and that's what we focused on.

So I think the business model is a key differentiator.

Our size and our approach on technology are key differentiators. We don't have long R&D requirements, and we don't have these massive supply chain requirement challenges like nuclear graphite supply chains and some of those pieces. We all share nuclear fuel supply chain challenges, but there's a lot of work, obviously, that's moving that forward. That said -- and we can diversify into recycling because we're a fast reactor, which is awesome, meaning diversify fuel sourcing. That said, we also have the progress points to-date, right? I mean we're the first of the non-light water companies to formally engage in the NRC's pre-application processes back in 2016. We've had a lot of regulatory traction there. We're the only company that has a site use permit for commercial plan as a national lab, and we're the only company that has fuel secured for an advanced reactor as part of a partnership with the National Lab and the Department of Energy as well.

So all those are pretty great position to have that we've been building for a long time so that we can be well suited to be -- take advantage of the opportunity. I can't sit here and say, oh, we knew the timing was all going to line up exactly like this. I wish we could have stuff even sooner than we now, for example. But I think we've long felt that the physics of energy make what's happening in terms of recognition of nuclear incision inevitable, which just happens to be accelerating at a really good time where we're really well positioned at one of the leaders of the pack with respect to that.

So I think those things have been pretty constructive for differentiation for us. That said, I think there's still some confusion at times about licensing and about readiness to market and all these other factors and the differences between different steps on the permitting process, the permitting journey, I should say, ranging from things like construction permits for test reactors or construction permits for commercial reactors or design certifications or combined licenses and all of that.

So I think there's still some room for obviously continued education across the board, and that's one area where we see that being pretty clear. But that's where our model is very advantageous as we go straight to the license that actually gets you to commercial operations and then grow from that and have the repeatability from that accordingly.

Pavel Molchanov

Appreciate the color on all that.

Let me also follow up on the recent politics. Can you just remind in the economics of -- or the indicative economics of your projects that you spelled out more than a year ago, was there any assumption for either ITC or PTC for nuclear?

Jacob Dewitte

The models we put out do not include those directly in there. I don't know, Craig, if you want to add any commentary on that but yes, [it's exclusive.]

Richard Bealmear

Yes. I mean we've always viewed it as upside.

I think we did have some levelized cost of energy metrics in our last 2Q update in our Investor Day presentation. it showed a range of \$90 to \$40, and the \$40 did include the benefit of ITCs, but we've always viewed that as not a requirement to generate an appropriate return.

Operator

Thank you. And now, I'd like to turn the call back over to Sam Doane, Oklo's Director of Investor Relations, to present a couple of retail investor questions.

Sam Doane

Thanks, Marjorie. Yes, we've had a number of inbound retail investors questions. I'd like to just ask a couple here.

The first one is, when can we expect Oklo to produce a physical plant? And is the time line solely dependent on legislative changes?

Jacob Dewitte

Yes.

So no, not dependent on legislative changes. We see legislative changes as possibly being accelerative and [inconducive] to this. But I think in many ways, we see a lot of the legislative activity probably going to be more geared for the following units to be more, I guess, more constructive for acceleration on those units, just given all the other factors that kind of dictate the time frame for that first plant. But we're targeting beginning the initial operations of that plant in late 2027.

Sam Doane

Great. The next one is, will you explain the moat Oklo is building out to protect against other competitors? And why Oklo is poised to power an increasingly large share of the nuclear-powered AI market?

Jacob Dewitte

Yes.

I think we see this manifest in a couple of ways, but it's pretty comprehensive throughout the business, right? One is the business model where we're selling power and not kind of the conventional model that allows us to consolidate the deployment partnerships through us where we bring in the partners like the Siemens of the world, like the Centrus of the world and others to help actually deliver the plants and therefore, the power.

Additionally, we see value in the size we have, which gives us flexibility to offer kind of redundant, frankly, shaft redundancy, having more plants than just one to power, especially industrial assets that want high reliability power. And the size allows us to target the markets from a slightly different angle, which we think is pretty important. And then from the technology side, it sounds kind of funny, but building off a very mature technology base and optimizing that for operations and deployability and not necessarily for a lot of fundamental R&D requirements to go forward from that or to deliver that gives us some advantages on that front because we design on the technology side accordingly to cost and supply chain capabilities that exist today that help us negate some of the significant supply chain investment requirements that otherwise exist for some design choices that one could make.

So we've tried to avoid those. And accordingly, that gives us some supply chain scalability that's faster, frankly, and less volume limited.

I think that's a differentiated factor, right? We don't need to build like a factory to build a bunch of reactors to get out. That's, I think, arguably less constraining because you need all the capital to put in the factory. And then you're inevitably going to have to retool the factory because it's pretty hard to get it right before you actually start doing it. And you're also going to need capital to do that and you're going to be bandwidth limited and you're going to need more capital to scale that capacity. Instead, we try to leverage existing supply chains, existing suppliers and manufacturing capabilities to actually get the supply chains able to -- well, use those supply chains so that we're not as constrained. That means our unit costs are probably going to be a bit higher than they would be if we fully internalized it, but that's okay for now. We can clearly have support to pass those along and be quite competitive. And then in time, if we decide there's things that make sense to internalize for margin control or improvements or whatever, then yes, we can take those approaches. But we'll be in a different position with cash flows in terms of what that looks like to finance that kind of growth.

So right now, I think we're pretty excited about what those positionings look like. But I think the other thing is just really our capital efficiency. The numbers we spent this last quarter are quite a bit less than what you often see in the nuclear industry, and that's a reflection of a cost-conscious culture that reflects what I just talked about, a focus on being able to be efficient in getting these things out the door and leveraging what's been done before. And that's very much something that is a manifestation of kind of the culture we've built from the beginning and important for us to kind of continue to maintain as we grow. Obviously, as we grow, we'll spend more money and those things happen as you do that. But starting with that base is a great place to be rather than starting in a really high cash burn position, which is all too often kind of what the incentives are in nuclear to do before you're shipping anything.

In fact, way before you're shipping anything.

So that gives us some advantages in that sense.

So across a lot of prongs, those things are pretty helpful for us. And then I think the other really major one is the timing advantages that we have, given that we're the only company with the timing and the maturity we have on the site-use permit on the fuel -- having fuel secured and awarded to us. All those factors just give us a massive advantage in getting to market in terms of being an early mover and then having the opportunity to scale and learn across our fleet accordingly on that sense. And with our business model, since we take some of the owner-operational, we take that owner-operational risk off the table, you don't have a lot of customers saying, okay, we're interested, but we want to wait and see a couple of years of operation from your first plant. Instead, people are like, okay, well, you're providing the power, great, we're comfortable to do that. And then we can accelerate the lessons learned accordingly to our fleet as we grow and scale.

So it gives us a lot of benefits that way.

Operator

Thank you. I'd now like to turn the conference back over to Jake for any closing remarks.

Jacob Dewitte

Awesome. Well, thank you all for joining us today, and I appreciate the attention and engagement as always.

I think it's a particularly exciting time in nuclear, especially in the last month, 1.5 months with all the activity in the space. We see all these announcements that are being made as extraordinarily constructive and validating of the opportunity that Nuclear is well positioned to meet, which is the opportunity to provide abundant, affordable, reliable and clean energy. And I think we're pretty excited at Oklo about the position we have in the market to do that, validated by our customer partnerships and our general traction to deployment.

So look forward to keeping you all updated in the next quarter, and appreciate the time again.

Operator

Thank you. And ladies and gentlemen, that does conclude today's program. We thank you for your participation.

You may now disconnect.