



**LanzaTech Global Inc.**

**Third Quarter 2023 Earnings Conference Call**

**November 9, 2023**

## C O R P O R A T E P A R T I C I P A N T S

**Omar El-Sharkawy**, *Vice President, Corporate Development*

**Jennifer Holmgren, PhD**, *Chairman and Chief Executive Officer*

**Geoff Trukenbrod**, *Chief Financial Officer*

## C O N F E R E N C E C A L L P A R T I C I P A N T S

**Leo Mariani**, *ROTH MKM*

**John Annis**, *Stifel*

**Ryan Pfingst**, *B. Riley FBR*

## P R E S E N T A T I O N

### **Operator**

Good day and welcome to the LanzaTech Global Inc. Third Quarter 2023 Earnings Conference Call.

All participants will be in listen-only mode. (Operator instructions).

After today's presentation there will be an opportunity to ask questions. Please note, this event is being recorded.

I now hand the conference over to Omar El-Sharkawy, Vice President of Corporate Development at LanzaTech. Please go ahead.

### **Omar El-Sharkawy**

Good morning and thank you for joining us for LanzaTech Global Inc.'s Third Quarter 2023 Earnings Conference Call.

On the call today, I'm joined by our Board Chair and CEO, Dr. Jennifer Holmgren, and our CFO, Geoff Trukenbrod.

Earlier this morning, we issued a press release with our third quarter 2023 financial and operating results, as well as an Investor Presentation summarizing the Company's performance and key operational highlights for the quarter. We intend to file with the SEC our quarterly report on Form 10-Q for the quarter ending September 30, 2023, after market close today. Both our press release and results summary Investor Presentation can be found in the Investor Relations section of our website at [www.lanzatech.com](http://www.lanzatech.com).

Before we begin, I'd like to direct you to the disclaimers in the front of the Company's Investor Presentation and remind you that today's call may include forward-looking statements. Any statements describing our beliefs, goals, plans, strategies, expectations, projections, forecasts, and assumptions are forward-looking statements. Please note that the Company's actual results may differ from those anticipated by such forward-looking statements for a variety of reasons, many of which are beyond our control. Please see our recent filings with the Securities and Exchange Commission, which identify the principal risks and uncertainties that could affect our business, prospects, and future results. We assume no obligation to update publicly any forward-looking statements. We would also like to remind you that our previously provided 2023 guidance, as, or if updated, on this call, constitutes the entirety of the Company's financial and operational guidance and no other prior projections or forecasts from the Company should be relied upon.

In addition, we will be discussing and providing certain non-GAAP financial measures today, including Adjusted EBITDA. Please see our earnings release and filings for a reconciliation of these non-GAAP measures to their most directly comparable GAAP measure.

Today's call will begin with remarks from Jennifer providing an overview of our performance. Geoff will then review in greater detail our financial results from the third quarter, and Jennifer will conclude with a few closing remarks. At the conclusion of these prepared remarks, we will open the line for questions.

With that, I'll turn the call over to Jennifer.

### **Jennifer Holmgren**

Thank you, Omar, and thanks to everybody for joining us today.

We had an exceptional third quarter. Commercially, we grew quarterly revenue to \$19.6 million. That represents a 52% sequential increase and a 143% year-on-year improvement. This performance was fueled by robust growth across all three of our business lines: our core Biorefining business, our CarbonSmart business and our Joint Development and Contract Research business. In addition, we reduced our quarterly cash burn to \$24.2 million in the third quarter from \$33.8 million in the second quarter.

Operationally, our team has kept us on track to start up three new commercial plants in 2023, as outlined on Slide 5 of the presentation. Our joint venture partner Shougang Steel started up its fourth plant, a 60,000 ton per year facility at a ferroalloy mill.

Also, during the quarter, our partner IndianOil started up its 33,500 ton facility at the Panipat refinery. This is our first commercial-scale project in India and the first commercial facility that will convert carbon dioxide rich refinery off-gas into ethanol. Both bioreactors have demonstrated ethanol production and we are now focused on ramping up to full production capacity.

Our partner ArcelorMittal just started the first bioreactor at its 64,000 ton per year facility at its steel mill in Gent, Belgium. The steel mill is scheduled for routine maintenance in mid-November, and following completion of that maintenance we will restart with ramp up to full production in early 2024.

Recurring revenue from these 2023 plant startups will contribute to the top line in 2024 through the payment of royalties and the sales of microbes, media, and software services. It is important to recall that the four plants operating in China are held through our joint venture, and that the royalties for these plants are structured differently than with other licensees as some of our royalty value manifests itself through our equity ownership in the JV, and to date, the profits have been reinvested in building additional commercial plants.

The addition of these 2023 plant startups will bring our total installed name plate capacity to more than 300,000 tons. That's approximately 100 million gallons of annual ethanol production. This increased production will enable us to secure more offtake volumes to supply our growing CarbonSmart business.

While these six commercial plants represent half a million tons of annual carbon dioxide abatement, we need to get to gigatons. This requires us to deploy at an increasingly accelerated rate. To that end, in addition to continuously developing our core licensing project pipeline, we are actively partnering with strategic capital partners to co-develop project opportunities.

We have talked previously about our partnership with Brookfield Renewable, which is focused on the US, EU, and UK markets, and we recently announced a joint venture with the Olayan Financing Company, a subsidiary of the Olayan Group, to develop projects in the Kingdom of Saudi Arabia. We are extremely excited about this partnership, and through it believe we can get more steel in the ground and more plants online to capture and recycle waste carbon. The joint venture will develop project opportunities and source outside investment partners, ensuring that the projects are more akin to capital-efficient, high-return licensing deals.

With partner Brookfield, we continued to progress two co-development projects. These Europe-based industrial off-gas projects are progressing through early-engineering phases, and we anticipate that one of these projects will move into the advanced engineering early next year, setting us up to transfer the project to Brookfield at FID within the first half of 2024.

FID, or final investment decision, is a critical project milestone in the development lifecycle, signifying the project is ready for construction after the completion of major engineering work, site selection and procurement, permitting, offtake contracts, and financing packages.

Our work with partners like Brookfield and Olayan not only provides access to incremental offtake and additional economic upside, but also enables us to condense certain aspects of the project development timeline which, in turn, accelerates our growth and pace of deployment.

We have a high degree of confidence around our global commercial project pipeline and we continue to advance projects through the various stages of the project and engineering development cycle, as shown on Slide 8 of the presentation.

The growth and momentum across our business is visible and tangible. Third quarter, we delivered the first Basic Engineering Package, or BEP, for Project Dragon, an integrated gas fermentation to Sustainable Aviation Fuel plant in the UK. We anticipate that the Front End Engineering Design, or FEED, of this alcohol to jet portion of the project will be completed this month, driving continued engineering services revenue through the fourth quarter and into next year.

Globally, new material circularity policies and corporate commitments are driving customers to seek recycling solutions such as LanzaTech's that keep materials in use and out of landfills. With an estimated 450 million tonnes of carbon embedded in chemicals and materials annually, we have an urgent need to deploy our scalable recycling technology globally to enable a circular carbon economy. The apparel industry, which generates 92 million tonnes of global textile waste annually, represents an area of particular interest to LanzaTech and our customers. New end of life product legislation in the EU and beyond, such as extended producer responsibility and public disclosure of unsold products discarded, is putting pressure on producers to pursue material recovery technologies.

It remains evident that our early-mover advantage and our demonstrable experience in processing solid waste for conversion to chemicals have led to additional partnerships beyond our longstanding partnership with Sekisui in Japan and continue to bolster our project pipeline.

While we are advancing early-stage engineering work on several commercial-scale municipal solid waste projects with Sekisui in Japan, we are developing additional commercial scale solid waste projects across a diverse geography base, including Europe, the Middle East, and North America. We have recently hit major development milestones across all of these projects that serve as an important component of our go-forward financial momentum.

For the NextChem Roma Project, we completed basic engineering and are commencing the FEED stage for a 64,000 ton per year waste-to-ethanol facility. A second NextChem waste-to-ethanol project in Italy is now moving through the early stages of engineering. In the United Arab Emirates, our work with Tadweer, the Abu Dhabi waste management company, is progressing with an ongoing feasibility study for an integrated solid waste to sustainable aviation fuel project.

In the United States, a commercial project basic engineering package is under execution with a multinational tire company to utilize waste products such as end of life tires and municipal solid waste, providing an innovative solution for a market where there are approximately 1 billion end-of-life tires generated per year.

All these projects will continue to contribute to the top line in the form of engineering services revenue through the fourth quarter and into 2024.

In parallel, we advanced several projects utilizing industrial off-gas feedstocks. We completed a feasibility study for integration into a steel facility with JSW, one of India's largest business conglomerates and the largest steel manufacturer. We are also working with Jindal Steel and Power Limited, or JSPL, an Indian Steel company under the Jindal group and the third largest private steel producer in India. JSPL has received around \$20 million through grants available in India for commercial projects for the deployment of our technology in one of their steel mills.

Turning now to CarbonSmart and the various applications for ethanol within the transportation sector from road to aviation to marine fuels. These fuel opportunities unlock significant markets commensurate with the volumes of commercial ethanol we have available. We have been following closely the policy developments on recycled carbon fuels, and as we assess the fuels markets in Europe, we have seen slower than expected progress on the policy and fuels certification front. Technical specifications of fuel requirements are yet to be clarified and approvals by the European Commission to accredited certification bodies for the certification of recycled carbon fuels for sales within the EU have been delayed. Once approvals are granted and the technical details are outlined, we expect to progress on fuels certification for sales in Europe, wherein increasing numbers of EU Member States have included this new fuel category in their national regulations. Certification and approvals will support significant new markets for CarbonSmart ethanol.

We see enormous opportunity for our ethanol to be utilized to help the shipping industry achieve its goal of reducing its greenhouse gas emissions by at least 50% by 2050 and are developing a go-to-market strategy with potential customers for the use of ethanol for the marine sector, where global demand for marine fuels is expected to reach 15.8 million tonnes in 2030. We are encouraged by recent announcements by Wartsila, a leading maritime transportation propulsion company, and Raizen, the world's largest producer of sugarcane ethanol to conduct tests on dual-engine vessels with both traditional maritime fuel and with ethanol. Currently being produced at scale on a global basis, ethanol has the potential to supplement methanol as a second-generation fuel to help meet the industry's emissions reduction goals.

Turning now to sustainable aviation fuel, the LanzaJet Freedom Pines facility is expected to begin operations in early 2024. As you can see on Slide 6 of the presentation, once operational, this plant will be the world's first alcohol to jet SAF facility and will produce approximately 10 million gallons of sustainable fuels per year – 9 million gallons of SAF and 1 million gallons of renewable diesel. Together with Project

Dragon in the UK, this represents significant progress in the production of SAF. We're encouraged by the incredible demand pull that the marine and aviation sectors provide for our ethanol production facilities, which can deliver fuel without impacting land, water, or food resources.

Recently, our EU entity completed EU REACH registration for ethanol which allows us to produce and import ethanol or finished products containing ethanol. Additionally, we believe that having robust third-party sustainability audits and certification is critical to doing business and allows us to become a reliable supplier of sustainable CarbonSmart products to brands.

To this end, we continue to work with the Roundtable on Sustainable Biomaterials, a robust and credible sustainability framework, for third party certification at our commercial facilities. In addition, this quarter, two of our commercial facilities in China achieved ISCC CORSIA and ISCC PLUS certifications. This ISCC PLUS certification is well-recognized in the chemicals market as a voluntary sustainability certification and the ISCC CORSIA certification has been approved by the International Civil Aviation Organization and positions our existing Chinese facilities as potential suppliers of ethanol feedstock into the regulated SAF market.

Transparency on sustainability and working with credible third parties is important as we continuously improve our technology and scale. Thanks to feedback from our various market touchpoints over the last several months, I am pleased to share that you can now find details of our life cycle of some of our products on our website.

Let's transition now to CarbonSmart materials, which you can see outlined on Slide 9 of the presentation.

Craghoppers, a British performance wear brand, released a collection of performance fleeces made from polyester fibers derived from CarbonSmart ethanol, and remain in active discussions for additional commercial product launches with our CarbonSmart ethanol.

We also recently announced our partnership with Dow to sell surfactants made from carbon emissions. Surfactants are an important chemical compound found in everyday products like shampoos, detergents, and soaps. Through this partnership, we have an entry to a wider market of many end users who already work with Dow as part of their supply chains. LanzaTech continues to sell to other interested customers in the surfactants business, including longtime partner Mibelle. In 2024, we estimate detergent sales in the CarbonSmart business of around \$1 million, a number we expect to grow significantly over the next few years.

We are building an ecosystem with brand leaders for transforming sustainable raw materials into products. With CarbonSmart as an enabler and trusted third party certifiers as validators, we are giving consumers a choice about which products they use in their everyday lives. We are seeing CarbonSmart brand partners planning multiple collections rather than pursuing a one-time demonstration collection with materials made from recycled carbon. Not simply a marketing ploy, these first CarbonSmart products are the first steps towards validating supply chains that do not require virgin fossil carbon.

Building on these successes to date as well as the recent certifications achieved, we continue to anticipate planned commercial campaigns from existing and new brand partners across various consumer product verticals in the fourth quarter and through 2024. We are proud of CarbonSmart's growing position as a decarbonization enabler across industries and economies, and we're looking forward to continuing growth and expansion of the business.

In addition to the successes we've achieved this quarter, we advanced a number of initiatives to ensure our process competitiveness.

We continued our work at the Suncor demonstration facility in Canada to produce a key new production strain making isopropyl alcohol, or IPA at scale. This high-value chemical is commonly used as a solvent, as a chemical intermediate, or in sanitizers. IPA commands a large market of approximately \$3 billion annually, a market which today is almost exclusively met by virgin fossil-based production. IPA can also be utilized as a feedstock for the production of polypropylene, a chemical with an annual market size of approximately \$123 billion and that is also nearly exclusively produced with virgin fossil-based inputs.

Polypropylene is a key polymer used for medical devices including syringes and IV bags, as well as for large-scale applications in automotive, furniture, textiles and other everyday products. We are currently negotiating our first commercial IPA production license so we can move quickly into the commercialization of our first non-ethanol producing microbe.

Additionally, we surpassed our critical intermediate milestone for direct microbial production of monoethylene glycol, or MEG, a key ingredient in polyester fibers and PET bottles. We have now produced MEG directly from real-world syngas derived from non-recyclable solid waste. LanzaTech has partnered with InEnTech, Waste Management, and lululemon, receiving financial support from the US Department of Energy for upscaling of non-recyclable solid waste to MEG via gasification of the waste to syngas and then production of MEG via microbial fermentation of the waste-derived syngas.

In the race to become cost competitive with conventional fossil, the direct production of MEG, turns a four-step process into one step, further decreases energy consumption and eliminates substantial water and chemical use associated with that four-step conversion process.

Our cross-team collaboration demonstrates the ability to turn waste plastics or apparel that has reached end of life directly into the key building blocks for plastics and polyester. Circular MEG for production of plastics or polyester fibers is gaining interest from many consumer brands, such as Danone, with whom we have collaborated on this new microbial biocatalyst.

Overall, our science team's goal is to develop new commercial strains for the direct production of different industrially-relevant molecules. To that end, the synthetic biology team has recently decreased the time it takes us to produce new strains, which has traditionally been a bottleneck in our new product development pipeline. This process improvement is enabling the acceleration of the prototyping and testing of new product-producing strains. Additionally, we have also been developing the capabilities to produce single cell protein as a primary product from our gas fermentation platform.

Lastly and most importantly, in the third quarter, we were proud to have zero lost time injuries and zero recordable injuries once again. This important achievement reflects safe execution across our operations, including our offices, laboratories as well as the global commercial scale plants across the globe. This high standard of safety remains at the forefront of everything we do.

With that, I'll turn the call over to Geoff to provide details on our financial performance. Geoff, please go ahead.

### **Geoff Trukenbrod**

Thank you, Jennifer, and good morning. Thank you to everyone joining us.

As seen on Slide 11 of the presentation, total revenue for the third quarter 2023 of \$19.6 million grew by 52% sequentially, and 143% year-over-year. Revenue from our biorefining carbon capture and utilization category grew 256% year-on-year, reaching \$12.4 million, driven mainly by ongoing and recently initiated engineering services work on several projects as well as from growth in licensing.

We achieved approximately 23% quarter-on-quarter growth in engineering services revenue, reflecting the ongoing work for Project Dragon as well as work on several of our solid waste-to-value projects.

Research and development revenue, which includes our joint development and contract research work grew 70% year-on-year and 122% quarter-on-quarter to \$5 million, reflective of ongoing as well as meaningful contribution from new customer projects.

CarbonSmart revenue grew 34% year-on-year and 124% quarter-on-quarter to \$2.3 million in the third quarter, consistent with our second half-weighted plan. CarbonSmart sales in the third quarter came from a diverse set of products sold to customers including Coty and Mibelle.

Total consolidated revenue for the first nine months of 2023 totaled \$42.2 million, a 64% year-on-year increase.

Looking to revenue for the remainder of 2023, we expect another quarter of robust quarterly growth. While our growth targets remain consistent with our views when we established our full year outlook for 2023, when considering our results to date and certain opportunities that have slipped into next year from a timing standpoint, we target full year 2023 revenue to fall at the low end of our guidance range of \$80 million to \$100 million.

We anticipate that fourth quarter revenue performance will be driven by contributions from multiple sources, including continued engineering services revenue from our Project Dragon in the UK and our waste-to-value project focused on end of life tires in the United States, as well as from engineering services on new projects, with partners like JSPL for a steel off-gas project in India. We also anticipate contribution from our project with partner ADNOC for a prospective carbon dioxide plus hydrogen project in Abu Dhabi, which has recently commenced analyses work.

On the CarbonSmart side, we expect to run additional campaigns for existing customers like Coty and Mibelle, as well as for several new customers. We expect our JDA and Contract Research business to benefit from contributions from several existing projects as well as from projects, like with partners L'Oreal and SHV Energy, that have completed the phases of their initial scopes and are now moving into their next phases.

In the third quarter, gross margin sequentially increased to 27% from 16%, which, in conjunction with strong revenue growth resulted in gross profit increasing 150% quarter-over-quarter, to \$5.2 million. This quarter-on-quarter improvement reflects the increased contribution from higher-margin recurring and engineering services revenues, as well as from strong margins from several JDA projects. We continued the engineering development work on our Project Dragon in the UK, for which we have a 20% cost-share obligation associated with the grant awarded by the UK government. Gross margin on this project in the quarter improved as we increased our internal labor utilization on its development. Again, while Project Dragon is a current drag on gross margin percentage, we are advancing the project toward FID with the support of the grant funding with the goal of selling the rights to the project in 2024.

Operating expenses in the third quarter increased 31% year-on-year, reflecting our growing operational base. It is important to note however, that operating expenses declined 9% compared to the second quarter, predominantly as a result of lower R&D expenses quarter-on-quarter from better labor utilization contributing to COGS, and from lower SG&A. As we mentioned on our last earnings call, our ongoing investment in people, innovation and process improvement in our gas fermentation platform and microbe commercialization activities beyond ethanol-producing microbes was pulled forward into the first half of the year, and the lower R&D expenses in the third quarter reflect a normalization in this expense.



Overall, we continue to expect operating expenses for the second half of 2023 to be less than those reported in the first half.

Net loss in the quarter was a negative \$25.3 million and Adjusted EBITDA was a negative \$19.1 million. Adjusted EBITDA loss improved by 20% quarter-on-quarter thanks to higher gross profit and sequentially lower operating expenses. As we have discussed previously, the key to turning Adjusted EBITDA positive is to continue growing gross profit to exceed our operating expenses. This quarter we significantly increased gross profit without increasing operating expenses, demonstrating our continued progress towards profitability. We're proud of the significant growth we've delivered in 2023 and expect our robust commercial pipeline to continue this strong growth momentum into 2024 and beyond.

Turning to the balance sheet, we want to highlight that in our latest 10-Q, to be filed later today, due to a change in our interpretation of the applicable accounting rules, we've revised the accounting treatment for certain elements of our Forward Purchase Agreement, or FPA. Specifically, this change involved the reclassifying the prepayment amount of \$60.5 million, which was previously recorded as part of a net noncurrent derivative asset to equity. The remaining liabilities of \$38.1 million previously netted against the prepayment amount are reflected as long-term liabilities. This updated accounting treatment was reflected in the financial statements in the 10-Q to be filed today, which are subject to quarterly review by our independent auditor.

As a result of this specific noncash accounting treatment change, we filed an 8-K this morning stating that our first and second quarter 2023 financials can no longer be relied upon and we expect to restate them to reflect this change. This expected restatement is a result of an exclusively for the same isolated FPA accounting item I just described. Importantly, such a restatement for the first and second quarters of 2023 is not anticipated to impact any other balance sheet or income statement accounts, nor our earnings, cash flows or ongoing operations in any way. Also, this revised accounting treatment is already reflected in the third quarter financial results as they were reported to and discussed you today. We appreciate your patience as we complete this process, and are focused on completing these filings as soon as possible.

Finally, we exited the quarter with cash on hand of \$136.9 million, which includes cash, cash equivalents, restricted cash, and investments in US Treasuries and high-grade corporate bonds. Cash burn in the quarter reduced to \$24.2 million, nearly \$9.6 million lower than the \$33.8 million cash burn in the second quarter. We expect to see ongoing improvements in cash flow from operations, net of working capital swings, quarter over quarter as we advance and grow the business to positive cash flow, and at this time, we see no need to pursue any dilutive financings.

I will now turn the call back over to Jennifer for some closing remarks before we open the call for Q&A. Jennifer?

**Jennifer Holmgren**

Thank you, Geoff. In summary, we had another strong quarter with continued growth across our business. We continue to focus on executing our business plan, and this is reflective of our 64% year-on-year revenue growth for the first nine months of 2023.

We are in the midst of what the UN calls the triple planetary crisis – a climate crisis, a biodiversity crisis and a pollution crisis, each compounding one another in complex ways. The Intergovernmental Panel on Climate Change estimates that in order to meet our climate targets we must achieve nearly an 8% year-over-year reduction in greenhouse gas emissions by 2030. Experts are skeptical that this can be done in the six remaining years, yet I remain optimistic. I participated in New York Climate Week, and one of the clear focus areas throughout the week was how to accelerate widespread deployment of new decarbonization technologies. We will not bend the carbon curve by continuing to operate in the status quo.

We were honored to receive the Decarbonization at Scale Award at the ADIPEC awards last month in recognition of our commercial progress and steadfast commitment and efforts toward delivering our planet a gigatonne-scale solution.

At LanzaTech, we are no strangers to the challenges of doing something different. We are challenging a status quo that is driving society toward an unlivable planet for future generations in the absence of immediate change. That is not for the faint hearted. We have been tirelessly working with partners, NGOs, policy makers and media to show how carbon recycling can be part of a more sustainable future for all. But to do that, we have had to help create new policy frameworks, be the first of our kind to get certifications and create new markets. This all takes time and patience, and we are proud of where we stand today, but we are still on a journey to change things.

We believe that our technology has the potential to change the trajectory of our climate crisis. We are not nibbling away at the edges. For the sake of our planet and society's future, we must be successful. This is why we continue to passionately focus on deploying our carbon recycling solutions at scale around the world, and I look forward to continuing to deliver positive results.

Thank you again for joining us and to so many of you for your support as we realize our vision of a circular carbon economy. Operator, we can now open the lines for Q&A, please.

**Operator**

Thank you. (Operator instructions).

The first question comes from Leo Mariani, ROTH MKM. Please go ahead.

**Leo Mariani**

Hi. Just wanted to follow-up on kind of your comments just around guidance for the year. It sounds like you expect to be kind of at the low end of revenue guide here in '23. If my math is right here, it looks like you have to roughly double revenue in 4Q versus 3Q to get there. Can you provide maybe a little bit of additional color? I know you cited some of the sources, where that comes from, but that's obviously a pretty big increase, so maybe just a little bit more clarity around that and your confidence you're going to be able to do that.

**Jennifer Holmgren**

Absolutely. Thank you for the question, Leo, and thank you for continuing to support and follow us.

First of all, yes, your math is absolutely impeccable. We do have to double, pretty close to double the third quarter. We believe that we are on track to do that. We will get those revenues from all three business lines. All of them will contribute. So, Licensing, the Biorefining, CarbonSmart, as well as the Joint Development Projects. So it's all three of our business lines together that will help us achieve that number.

**Leo Mariani**

Okay. I guess do you feel like a lot of that is "under contract" or kind of coming on the books? Do you feel like a lot of that is sort of, you know, secure revenue as you sort of see it today? Or is there any potential for any slippage on that?

**Jennifer Holmgren**

I would say that it is mostly under contract, so yes, we're on a glide path to most of that.

**Leo Mariani**

Okay. That's helpful. I was hoping you guys—one thing I didn't hear on the call was any kind of discussion of your sort of EBITDA guidance. I know you've got a guide out there that you put out, negative \$65 million to negative \$75 million here this year. Can you just comment on that? Do you guys still expect to be within that range?

**Jennifer Holmgren**

Yes, we do expect to be in that range. We'll be on the high end of that range. I think our focus—you've seen it in the third quarter, right? We almost doubled the prior quarter as well, right? You see the improvements across everything we do, not just on the revenue side. We increase our profits and we also reduce our costs. It comes down to margins and what we can command. But we are making progress on every financial (inaudible) of our business.

**Leo Mariani**

Okay. Then just on margins, obviously you had a very strong increase here in 3Q, 10.5% up versus 2Q. Can you just kind of talk about trends in the 4Q? Should we be expecting a similar margin this quarter, and if we get the big revenue increase obviously that can significantly improve the EBITDA loss as well. Maybe just any kind of comments on margin trajectory in 4Q?

**Jennifer Holmgren**

Absolutely. Let me pass that one over to Geoff to give you some details.

**Geoff Trukenbrod**

Hi Leo. Thanks. Yes, you should continue to expect that our margin improvement should be consistent, more consistent in the fourth quarter with Q3 than it was in the first half of the year as we've talked about before. A large impact is our revenue mix on that and so as we brought in additional customers and additional revenues in the back half of the year as expected, many of those are higher margin revenue sources than a lot of the work that we had earlier in the year. We also talked about how Dragon was a bit of a drain on our gross margin and we kind of diversify that revenue base with other new customers and new revenue sources that have come on in the back half of the year, that margin improvement should perpetuate.

**Leo Mariani**

Okay. That's helpful. Then just last one from me. Just in terms of the plants that you have, you guys show this really nice kind of inverted pyramid in your presentation. You've got two plants that you cite as under construction. Can you maybe just provide a little bit more color on kind of what those are and any other sort of updates you might be able to share?

Then I guess you've also got 11 plants in advanced engineering. I see kind of one new plant kind of move into that category. Could you kind of help us all out a little bit with some of the companies that are kind of working on those 11 plants?

**Jennifer Holmgren**

Yes, absolutely. The plants that are—you know the plants that are starting up, right? We're talking about the LanzaJet plant at Freedom Pines and next year and this year ArcelorMittal and the additional plant that Shougang and the plant at IndianOil. To go over to the rest of the 11 in the more detailed pipeline, I'll hand it over to Geoff as well to talk a little bit about that.

**Geoff Trukenbrod**

Yes. Leo, as you saw, the pipeline has continued to progress and we've added additional projects into the pipeline. In terms of kind of the lower end of the funnel, we've got a variety of waste-to-value, so solid waste-to-value projects that we talked about here in that advanced engineering. Examples like Bridgestone, Tadweer, others that we've talked about earlier in the call. The two that are still remaining in construction are LanzaJet and ArcelorMittal; the rest have kind gone into the operating stages.

**Leo Mariani**

Okay. Thank you.

**Jennifer Holmgren**

Thank you.

**Operator**

Thank you. Our next question will come from John Annis of Stifel. Please go ahead.

**John Annis**

Good morning all and thanks for taking my questions. For my first one, can you provide background on how the joint venture in Saudi Arabia came together and frame how large you see the opportunity set being? Then to the extent that you can share, what would be the timeline in which you'd expect to see these opportunities move into your Project pipeline?

**Jennifer Holmgren**

Thank you for the question. The Olayan, the JV that we have with them is really to source projects and to develop those projects. The financing for those projects will come partially from them but also from others. The idea is that it allows us not to put projects on our balance sheet, and therefore what we will do is, as always, just have it a licensing model that supports our work.

How quickly? I would say during the development of the engineering agreement—I'm sorry, of the JV agreement, we've been developing projects in Saudi Arabia with them, so there's actually quite a few projects and opportunities in the pipeline. We expect it to impact our pipeline very soon, including as early as next year.

**John Annis**

Terrific. For my follow-up, referencing Slide 11, you had a nice increase in the Joint Development and Contract business quarter-over-quarter. Could you speak to the drivers of that increase and how you see revenues in the segment trending going forward?

**Jennifer Holmgren**

Yes. The projects in Joint Development pipeline are of two types. One of them is the example of the Project Dragon. That is a contract research project. The joint development projects—I'll turn this over to Geoff in a second, but the joint development projects, a lot of them the chemical projects that we do with partners. We have projects with L'Oreal, with Sumitomo Riko, (Inaudible) and others. Those are the pipeline

We are developing a lot of new molecules with partners that we intend to put into commercial in the next few years, and that work is typically done with partners. The reason, by the way, that we use partners in that is not just because they provide some of the funding, but because they also provide a channel to market. So when the molecules are ready, we have somebody who is going to immediately pick them up and we can go to commercial. That is really what the Contract Research and Joint Development pipeline is all about.

I will turn it over to Geoff in case he wants to add something.

**Geoff Trukenbrod**

No, I guess the only thing I would mention is just as a reminder, we think about the Joint Development business as also a driver of our core Licensing business. Once our partners who have helped prioritize our roadmap of these next molecules have the molecule, in addition to being potential offtakers in many cases we expect them to actually license the technology and build plants as well. So, we consider the joint development work to be integrated and complementary to our core business.

**John Annis**

Perfect. I appreciate all the detail, and thanks for taking my question.

**Jennifer Holmgren**

Thank you.

**Operator**

Thank you. (Operator instructions).

The next question will be from Ryan Pfingst of B. Riley FBR. Please go ahead.

**Ryan Pfingst**

Hey, good morning guys. For reaching your target of EBITDA breakeven by the end of next year, you talked about it a little bit, but is it just a matter of ramping revenue, or are there some costs that you're looking to drive out as well? If we're hitting breakeven EBITDA on a quarterly basis late next year, is it fair to say we should be thinking about positive EBITDA for the year in 2025?

**Jennifer Holmgren**

Thank you for the question. Let me transfer that over to Geoff.

**Geoff Trukenbrod**

Ryan, hey, thanks. Thanks for joining and thanks for the question.

As we think about EBITDA, as I mentioned a little bit earlier, the key is just continuing to grow the business and get gross profit up above our operating costs. We continue to be excited about what we expect to be a really strong 2024, and our path to profitability is how we described it. You've seen progress associated with that this quarter as we did improve our gross profit significantly while holding or reducing OpEx.

With that said, we'll provide more detailed guidance on 2024 in February, while we continue to focus on finishing strong in 2023 and advancing projects in the pipeline which will help drive that strong growth in 2024.

**Ryan Pfingst**

Excellent. Thanks guys.

**Operator**

Thank you. This concludes our question-and-answer session. I will turn the call back to Jennifer Holmgren for closing remarks. Please go ahead.

**Jennifer Holmgren**

Thank you very much for joining. We really appreciate it and we appreciate also your feedback. This is why the LCA got posted, because we received feedback that that was an important element. Thank you for being part of this.

I would also say I hope you appreciate that we're really growing as a business and have had just a tremendous third quarter. The fourth quarter will be even better and we look forward to sharing full year results with you very soon. Thank you.

**Operator**

The conference is now concluded. Thank you for attending today's presentation. You may now disconnect.