

All right, everyone, we'll make a start of it.

It's just gone 1:00 here in Sydney.

So yeah, I'm really excited for this one. We're welcoming back CEO Mr.

Michael Walsh from Metaliam, MTM, formerly

known as MTM Critical Minerals. We've also got Steve Ragle here as well,

the US president.

If you're new to the business, I would encourage you to go back and

re-familiarize yourself with the chat that we had in

June of last year, something that I myself should have probably done prior

to this meeting. I'm not as prepared as I otherwise should be.

But let me give you a bit of a rundown here if you

need a bit of a reminder here. So Metaliam has got some really interesting tech,

and it's called flash Joule heating.

It allows for the extraction of some critical minerals from a

variety of different feedstocks.

So instead of your traditional acid baths or your

more industrial-style smelting, this approach uses a very

fast thermal shock technique. So a huge amount of electricity

goes through the feedstock. It liberates things like gold, palladium,

gallium, these kinds of things. Kind of things you're hearing increasingly more in

the news these days, it should be said.

And the value prop here is that it's

very low carbon, it uses much less water, it uses much less energy

than other materials, and it's a really cool modular process as well,

so it can be stood up almost anywhere.

And it's very well-suited to things like e-waste, so think of old circuit boards,

think of semiconductor scrap and the like.

What's interesting about the business is that it's really at an

interesting juncture here, really ramping up towards

commercialization, which is always a very interesting stage in a company's development. And it's also very interesting from a listed company's perspective as well, because sometimes the market can take a while to cotton on to the change that's underway. And I guess our goal here today is to give you guys a good grounding in the business, the opportunity, where it's at, and what we might expect over the near term. Having said all of that, as is always the case, none of this is financial advice. And if you do have any questions, and we've had a good couple ones come through already, use that Slido link and I'll put it to the guys when we get the chance. So, with all of that said, Steve, Michael, thanks for your time today.

Thank you.

Thank you for having us.

So I do apologize for my lack of preparedness.

Let me get that out of the way here as well. There was a name change.

It's wrong-footed me and I'm sure most of our members are much sharper than I am, but

the ticker code is the same, so still MTM.

So if you're wondering,

if you can't find that last presentation, just search MTM and you'll be able to find it.

In fact, I'm looking at it right now on

the MTM page, and that is well worth a watch.

So we won't cover all of the old ground, but probably,

guys, worth spending five minutes just at the start here

giving that high-level overview. Mine was pretty rough and ready.

How would you fill in any gaps there?

Yeah, sure. So effectively, we're commercializing this breakthrough

technology for metal recovery, and as you said, Andrew, it's from a number of different feedstocks. We're primarily focused in the first instance on printed circuit boards, so electronic waste.

And these boards are very rich in gold, silver, copper, palladium, and tin.

Mm-hmm.

And we're targeting material that's got grades of gold.

Just to put it in gold mining terms, we're targeting boards that are about 200 grams per gold per ton equivalent. So it's obviously orders of magnitude higher than a typical ore body these days.

Mm-hmm.

But very rich material, very high-value feedstock.

And the traditional approaches for processing metals from PCBs is traditionally done in smelters in China.

And our approach means that we can do it in a much smaller footprint, much higher efficiency, better for the environment, but also it allows the processing to be done in the US and Western countries where power prices is more expensive.

So we're competing with traditional smelters, which of using technology from 50 years ago or even 80 years ago.

Yeah.

It's bringing the technology into the 21st century.

Then outside of printed circuit boards, we're also focused on some niche metal applications like gallium and germanium, as you mentioned.

Mm-hmm.

And these are very, very important metals, in particular for the Department of Defense in the US. And we are currently

in the Western world, completely reliant on China for gallium and germanium.

And what our process does is we allow gallium and germanium to be recovered from waste streams.

Mm-hmm.

So from material that might be already sitting in the United States or in the Western world.

And recently we've had our first successful Department of Defense grant related specifically to gallium, so we're quite excited about what we can do with the Department of Defense and potentially getting much bigger grants in the future, specifically for these very important metals that they're currently lacking in.

Mm-hmm.

And so they're the two kind of primary focus feedstocks, so the gallium and germanium waste and the printed circuit board waste. And then outside of that, there's a whole range of other mineral processing applications, so mining-based applications.

Mm-hmm.

We're not as advanced in terms of having formal partners that we can publicly announce, but we're very advanced in terms of proving the technology for a lot of the different parties, different mining companies that we've been engaging with over the last two years, who we're not at the point of being allowed to announce that we're publicly dealing with them. But there's an equally compelling opportunity in mineral processing compared to waste recycling.

And so there's effectively two business models we're going to prosecute. The e-waste is more of a build, own, operate, where we will purchase feedstocks and then own the full economics.

Whereas the mineral processing, we see that more as a processing as a

service type business, where we will sell a mining company some equipment, they will use the technology, we will get the capital-... equipment pricing and spare parts type business.

But then there'll also be a technology licensing fee per ton of material processed. So two completely different ways of operating.

And we think that the mineral processing is probably even bigger in terms of potential market that we can target.

We've got applications in lithium-

Mm

... rare earths, antimony, niobium, just to name but a few.

And the proposition for mineral processing is

to both,

we can effectively, if we had a new greenfields project,

we could potentially propose a completely different

flow sheet compared to traditional processing.

Mm.

And what it means in practice is deleting maybe

50 or more percent of the existing steps

to make a particular end product, like lithium carbonate, as an example.

We believe we can delete about 50% of the steps in that lithium

flow sheet if we do the cracking part, the upstream

cracking and impurity removal steps with our technique versus how it's

currently done-

Mm

... with using the Chinese flow sheets.

Got very similar opportunity in rare earths.

There's also a big opportunity in red mud tailings processing, so getting value out of red mud.

Yeah.

And we can go into the technical details on that if you want, but there's a huge opportunity there. Red mud tailings are a major problem in Australia, in the US, in Brazil, for alumina producers, and currently they just have these huge tailings dams filled with red mud that is a liability for them.

We can remove the iron from the red mud and the sodium, and then the residual remaining material can then be used in applications like cement and replacing clinker.

So there's a big opportunity in terms of remediation and getting value out of these huge tailings problems for alumina companies. And they're just some of the applications.

As I said, the primary focus right now is printed circuit boards, because it's much easier than dealing with a mining company who, they move at a much slower pace than we would like to move at.

Mm.

We've chosen printed circuit boards to be the first commercial feedstock for us, and that's why we're saying that our Texas facility is both a demonstration plant of the scale of the technology, and it will transition then into a commercial plant for recovering metals from e-waste.

Mm.

And we're well on track in that journey.

The Texas facility, I can show some photos if you'd like.

Yeah. Absolutely.

Sure.

I'll give you

co-host access here.

That should be good.

One sec. Okay. And just for a quick summary, we licensed this technology from Rice University in Houston, Texas about three years ago. It's a very well-respected university in the United States, in particular for the sciences.

And it's come from the stable of Dr James Tour.

He's had previous success-

That's right

... getting technology into ASX-listed companies.

One example is Weebit Nano.

That's right.

And this technology for metal application was actually originally sponsored by the Department of Defense via DARPA, which is their research arm.

And it's probably linked to the reason why we've had our first successful grant with the DoD a few months ago, and

we think that that's just the beginning of what could potentially be some very, very significant grants in the very near term.

Yeah.

So yeah, it's come from Rice University, and we've spent the last two years

as Metallium transitioning away from our original mineral exploration heritage into being fully focused on this

commercialization. And then now we've got our first commercial facility in Houston, Texas. It's about an hour

outside of Central Houston. It's a formerly active hazardous waste incinerator site.

We've got 10 acres that we're currently leasing, and we've got the capacity to take that up to 25 acres should we need it.

Mm.

So it's a truly industrial scale size site.

Mm.

This is just some photos of what we're building.

So it's definitely gone way beyond lab scale to what we're doing.

Yeah.

And this is the main building. This is a shot from a couple of months ago, but the main action is currently happening in these back buildings here.

Mm.

And once we've got the technology, we're confident that we've scaled it and demonstrated that scale, we'll be replicating all the reaction capability inside this main building here, which we're currently just replacing the roof on.

And then there's feedstock receipt and pre-processing, and also then post-processing is what the rest of the site is all about.

Mm.

And so, yeah, it's a big site, and it's in a perfect location.

We're not near any residential buildings.

We're about, I think, an hour away from the... No, probably 25 minutes away from the nearest, main residential area.

Mm.

But it's very close to the Port of Houston, and it's on just off a major highway, so it's a very convenient location.

Yeah. We're about half an hour from the Beaumont petrochemical process, which is due east of us. We're about 25 minutes from the Mount

Bellevue petrochemical process, which is due west of us.

Mm.

And we're about 35, 40 minutes from Baytown petrochemical complex, which is to the southwest of us.

And then, as Michael said, the Port of Houston is about 40 minutes away.

So very good

logistical setup, even though we have no residential neighbors, and our only other neighbor is the county landfill.

Yeah. It seems like such a c*****r of a site.

I suppose

all of these things are important for people that live in the area, but is there much to worry about, though? In theory, if there was a house next door, it doesn't strike me as a process that-

YeahYeah, I'm glad you asked that question.

So we have a subject matter expert for North America, Thompson, who's helping us with our chlorine management devices and equipment, and he has a number of places where he has these chlorine container devices across the fence line from a school.

And so we're not worried about it, it's just from a presentation point of view-

Yep

... it's nice that we're miles away from the next residence.

Absolutely. Perception matters.

And so, the other thing that just strikes me about all of this stuff is that whenever you have a technology that makes things faster and cheaper, that's in itself all you need to know.

But there's some interesting stuff happening around the world at this point in time on the geopolitical front that no one needs

elaboration on. But I guess that's got to be a pretty good tailwind for you guys.

Yeah. No, 100%. The whole onshoring narrative that really kicked off when Trump first came into office has really benefited our story because we're effectively recovering several of these critical metals that are on the top of their list. We mentioned gallium and germanium and tin-

Yeah

... and antimony and there's copper.

So yeah, it's really like a periodic table that is at our disposal. I'll let Steve comment on the engagement that we're getting with the US government and the different agencies.

I'll just bring up a-

Yeah

... like

maybe just-

Yeah

... Steve run through that.

Sure. We've had some success in dealing with the US government.

Your table stakes, as it were, is something called an

SBIR, which is the first type of grant you

get. So we have our first grant done with SBIR

from October

last year to January of this year. We're in the middle of working on our

SBIR phase two, which is a million bucks, and then this is

the Department of Defense Logistics Agency.

They're able to bolt on additional \$10 million scopes to

that SBIR. So in effect, to get government

grants, you have to have successfully navigated the first couple of SBIR engagements, and we've done that.

Yeah.

And so we track about 17 different non-dilutive finance opportunities as Metallium, and there's over \$800 million in that pot across those 17. Some of them are just licensing agreements for us in rare earth tailings.

Some of them are other kind of licensing opportunities where we'll have a long-term license and we'll have the maintenance contract and the operating contract for a facility and a small equity share. Some of them are more firmly in the own operate side of our business.

Mm.

So, just a lot of really good things going on, and the US government seems very focused on deploying resources into critical metals between now and the end of the year.

Yeah. Makes perfect sense. It really strikes me is that you're at this stage where all the ducks are all sort of lined up. And the other thing that should be mentioned as well, there's a pretty healthy war chest.

The balance sheet's in pretty good shape at this stage.

So-

Yeah

... once you sort of get...

What are people really waiting on here, I suppose, is the question.

There's always the, I think people like to sort of just see something that's up and running, and then perceptions can change very quickly.

Do you find that's a bit of the bottleneck at the moment from the investors' standpoint or-

Yeah. So I think the main

bottleneck is demonstrating or proving to people that this is actually real and-

Yeah

... the technology has been scaled out of the lab.

It had very humble beginnings at the scale that Rice University was originally testing, and we've increased that scale by nearly 100,000x from what they were originally testing.

Wow.

And I think some investors will want to be seeing a facility and that's making revenue, and they can see the recoveries.

Mm.

And I think we're probably several months away from being able to publicly disclose that we're actually now in commercial production, but it's-

Yeah

... it's almost imminent, though. We're not talking years.

Yeah.

And the

biggest inflection point that we have coming is getting multiple reactors.

So to achieve our 8,000 tons of printed circuit board target, which is our stage one target for Texas-

Mm

... we will need 24 of these reactors, FJH reactors.

Mm.

And before that, the next inflection point is getting

three units operating simultaneously at the same time.

Yeah.

And once we've demonstrated that we can control all three, like we've been controlling all the single unit-

Mm

... and getting the same recoveries, then we've really, in our mind, proven the scale because if we can do three, we can do eight, we can do 24, we can do however many.

Yeah.

So there's a big inflection point coming.

We hope to be able to announce that we've operated three successfully over a prolonged period by the June quarter.

Mm.

So it's pretty imminent of being able to announce that.

But once we've done that, we hope that it'll give people more confidence that we have truly scaled this up. And now it's just from there to the next hurdle, it's just about deploying more units-

Yeah

... and securing more feedstock supply agreements, offtake agreements.

And also just on that, we have had a huge amount of inbound interest from different parties in terms of testing and including, say, for example, data centers.

So we have the ambition to be a recycling partner of choice for either a Mag 7 type company or a data center who produces a lot of e-waste, and they're actually under pressure by the government to not be sending these e-waste metal units offshore.

Yes

And we're trying to get into that mix, and we've got some really good discussions going there. But to progress some of those to more advanced stages, these companies will need to see something up and running for a defined period. So we think that we'll get much more of these commercial opportunities papered once we've got the facility up and running, and people can come and kick the tires and see and prove that this is real.

Yeah.

But we're talking months, not years, for where we think we will be in the next journey in terms of commercial contracts with big-name operators and being able to produce revenue.

Yeah. It's a really familiar story, actually, that we come across to, particularly speaking to engineering types, where it's sort of like, "Hey, we can do it." And the science is there, the processes are there, but there's something in human nature that just, "I need to see it," right?

Yeah.

And it's a funny thing, and a lot of, I think, particularly hard for the more left-brained engineering types to wrap their head around because they'll just scream, "Look."

Yeah.

But we are a social— And no one ever wants to go first as well.

So there's sort of that thing.

One of the things I want to drill into here as well is, I think it's important because it's not as though— Well, correct me if I'm wrong, but it's not as

though

you're scaling up to sort of see if it will work.

One of the things that it seems, at least from someone of my perspective, is that a lot of the challenge with industrial processes and engineering is really one more of optimization than can you do it. So it's not like--

Well, I don't want to put words in your mouth, but I assume it's just the uncertainty for you guys where you're sitting right now isn't does this work at a larger scale as to sort of like, it's the error bars around the degree of efficiency, I suppose.

Correct. Yeah.

Yeah.

And we will still be optimizing probably for several months from here because printed circuit boards are a complicated feedstock and quite variable in terms of their metal content.

Yeah.

So it will take us probably several months to hone in on what's the best feedstock that we should be purchasing.

Because, for example, one of our PCB, printed circuit board suppliers has, I think, it's like 17 different products that they grade the printed circuit board into different assays for gold, silver, palladium, and tin.

Yeah.

And so we're going to see does the low-grade material actually give us better overall economics because it's cheaper?

Sure.

Or should we be just buying the high-grade material?

Yeah.

And that'll take a lot of testing and

just putting the material through and seeing what recoveries we get and then doing the financial model on it. So that will take time.

Yeah.

And we're probably months away from selecting the best feedstock. But in terms of supply, there's a huge amount of printed circuit board supply that's available out there.

Most of it, as I said, is going overseas to smelters-

Mm

... and we're trying to capture more of that and keep it in-country.

Mm.

And then in terms of, yeah, optimization, we will be continuing to do R&D on the tech in terms of the flow sheet, what we do post our FJH process.

At the moment, we're making metal chloride products, and they're saleable.

We can sell those. But we want to eventually go to even metallic metal to increase the payability.

And we're not focused so much on that right now.

We're focused on our FJH part.

Yep.

But the

reason that we would be spending capital in the future on the post-processing would be just to increase our payability.

Yeah.

So there's a lot of, I suppose, optimization to come.

But really, the core focus is proving the FJH, which is the key novel breakthrough tech in the middle of the flow sheet.

There's some pre-processing needed, like shredding and size reduction and those type of aspects. And then there's post-processing, as I say.

But the FJH, proving that at scale is the key

inflection point for us that's coming up.

Yeah. And those things at either end of the spectrum, there's no--

Well, I shouldn't say no challenge in it, but that's not where the challenge lies-

No

... I suppose. Yeah.

No. We'll be using off-the-shelf techniques like electrowinning and solvent extraction for some of that stuff that happens post-FJH.

We don't need to do it because we can sell these metal chlorides.

Yeah.

We think the payability will be able to, say, 70, 75%.

We want to take that payability up to 100% of contained metal value.

Yeah, nice.

So as I mentioned, was I right with that \$80 million figure in the bank?

Yeah, we've got 82 at the moment. Yeah.

82. Gosh, that gives you a fair bit of runway.

So what's that largely earmarked for at this

stage? Obviously, just keeping operations ticking over until full

commercialization. But any sort of other

noteworthy CapEx expenditures for that?

So the

main

purpose of it, we

will be deploying additional reactors to get us up to this 8,000 tonnes

capacity.

Mm.

So I said we're soon to demonstrate three units, and then we want to take that up

to eventually 24.

So there'll be some CapEx for the additional reactors.

And then we are doing studies on the post-processing stuff.

So we do have some capital earmarked for potentially putting in some of these additional off-the-shelf items to increase the payability in the future.

Mm.

And then we're also looking at optimization.

Instead of buying chlorine off tankers or in gas bottles, we're looking at making our own chlorine on-site.

Yeah.

That's using another thing that's off-the-shelf called a chloralkali plant, where you take in salt and put in electricity, you can make chlorine.

So we're looking at that. That would save us in OpEx, and it would obviously cost us in some CapEx.

Mm.

And then outside of that, we're also looking at new sites in the US.

We've got options on two additional sites, one in Virginia and one in Massachusetts.

Mm.

And we may start to look at some early site works just to put our foot more formally on those sites should we want to, when we're ready to roll out plants number two and three.

Yeah.

But we won't commit to those plants in a big way until we've got more, either a big strategic partner who wants to help us with that or more-... supply agreements locked in, in those regions.

Mm.

So I suppose those are the two main ones.

The new sites, the post-processing and optimization works and

yeah, we'll continue to grow the team.

And we're progressing towards this dual, this Nasdaq listing by the fourth quarter this calendar year.

Mm-hmm.

And that's all going well. We've got this audit happening at the moment, this PCAOB audit, which is needed to do this Nasdaq uplisting. We've got these ADRs that are currently trading over OTC.

Mm-hmm.

And the audit, when it's complete, will allow those ADRs to then be uplisted to the Nasdaq. So that was a big push for why we did this recent cap raise in January, mainly to US investors, is just to increase the US shareholder register.

Yeah.

Basically, we've been told several times that the more US we look, the better our chances of getting some of these big, substantial grants from the Department of Energy and Defense and some of these other government agencies.

And there's a huge amount of investor interest in the US for this type of critical metal processing and onshoring, and there's quite a limited number of opportunities.

So yeah, we're being pushed by some of our existing US shareholders to fast-track this Nasdaq, because they think our valuation should get a re-rating when it happens.

Yeah.

And the current register in terms of US shareholders is about 20%, and we want to obviously keep increasing that.

Yeah. For sure.

So with the

plant that's

currently being set up, it's obviously going to give you a much better handle on the engineering and all the metrics associated with that, but I imagine it also makes future capital allocation decisions much more easier.

Once you've got that sort of, you know what it's going to cost to secure the new plant, to put in the new reactors, to do all of this kind of stuff, it becomes much easier for yourself and the board to kind of go, "Well, listen, we've got the opportunity to raise capital here.

We're confident of getting an X percent return." Things become much more, I never want to say easy, but much more straightforward.

Yeah, transparent. That's right.

Yeah. And-

I was just going to say, yeah, we eventually want to be in a position where we can cookie cutter the design-

Yeah

...

for plants three and four and five so that we know exactly what we're building, we know exactly what it will cost. And that's the ambition.

We want this to be a completely modular plant eventually-

Yeah

... that we can roll out not just in the US, but anywhere.

Yeah.

Yeah, we're getting close to that being at that point.

One of the challenges for companies that have these sort of very large potential- ... addressable market is balancing the rollout. On one end of the spectrum, it's like as much as you possibly can, as quickly as you can, because the opportunity is so vast. The risk with that is sometimes all the money goes out the door, it takes a while to come back in, and something unforeseen sort of happens, and you can get yourself into a little bit of a bind. The other side of the coin, of course, is that you go too slow and you don't prosecute the opportunity as best you can. So there's no right or wrong answer to this, but I'm wondering how you guys deal with that kind of challenge, particularly when you're so bullish of the potential here is, how do you ensure that you effectively capitalize on the opportunity, but I guess do so in a measured way that you don't risk getting over your skis in case there's some capital markets dry up or whatever the case may be? Yeah, no, it's always on our mind. How fast do we go, and as you, yeah, it's very well articulated there. We basically have internal studies that guide what we do. And as an example, we just more formally engaged our EPCM partner engineering procurement construction company, in Texas more formally as the owner's engineer to help us with that in terms of studying what the remaining capital spend will be at site if we want to fully go down the value chain on the flow sheet. Also studying then what plans two and three may look like. But it is a challenge. The Iranian situation has

obviously impacted companies like us, and if things continue very badly over the foreseeable, and we do go into a major recession, then look, we have this big cash balance in the bank, and it may be more prudent to pause the brakes on any additional spend for the time being.

Mm.

And I suppose we have to make those decisions as they come up.

But I suppose to try and answer your question,

it's a constant battle because

we know the potential of this technology.

We're really eager to demonstrate to the world, but we also don't want to, I suppose, go too quickly, too soon, until we've internally proven to ourselves that the tech, at its current iteration, is the one that we want to commercially roll out. We know it works.

Yeah.

We just want to make sure internally. That's why we're doing things in stages.

Three reactors, and then once we're comfortable with the design for those, then we'll continue to add more and more.

And we'll keep learning over that journey.

Nothing's going to be perfect on day one. So yeah.

But we do have a very diligent approach, and the fortunate position we're in now is we've got about 82 million in the bank, and that gives us optionality on what we should do.

Yeah. For sure.

So what are the stay awake at night factors for you

two gents at this point in time? Is it

waking up to sort of check the phone in the morning to see what's happened

overnight?

On the geopolitical-

Yeah. Trump, he keeps us on our toes.

Why would you say that?

I don't know. I just don't know that.

Business-wise, we're dealing with chlorine gas, which-if you don't do it correctly, can be a problem. The good news is we're laser-focused on it.

We have equipment available to us called chlor containers and things like that, that look like torpedo tubes, where you put your container of chlorine inside of a torpedo tube, and you close it, and it's double contained, and it's very well-handled.

So-

Mm

... the fact that we're focused on that the way we are, and we're bringing in subject matter experts for our final design on the utilities at the site, that is probably the biggest area of focus.

I feel like we're getting an A+ in that area at the moment, but that's something you would talk about. Another thing you would talk about in a plant like this would be dust, which doesn't sound that sexy or anything, but it is a thing, and we've spent quite a bit of capital on dust management and, what do you call it, air filtering and bringing the dust into places where we can then actually flash that in the reactor.

So those are the two kind of operational issues.

On the people side, we're in very good shape because we're so close to three big petrochemical

complexes. We have... I don't want to say we have the pick of the litter on techs and maintenance people and that, but we are in really good shape on that front. So, what would you say?

Yeah. Very similar. Yeah. Obviously safety, we have to track very carefully because there's a lot of contractors outside at the moment. There's a lot of construction activities and other-

Mm

... you know, we're dealing with high temperatures and hazardous gases.

So yeah, safety is probably the biggest thing that would keep us up.

And then outside of that, yeah,

I suppose the way

the world currently is, the uncertainty out there, stocks like us do

tend to be, I suppose,

when risk-off comes off the table, we get hammered most.

So it's trying-

Mm

... to figure out how do we

mitigate that and make that less happen when these events do

happen. So-

Mm

... I suppose capital markets,

even though, look, we shouldn't be worried about capital markets because we've got

a really healthy war chest-

Right

... but it does obviously keep us up.

We want to maintain the value that we've built-

Yeah

... and obviously grow it from there.

So, but yeah, safety is probably the key thing.

And outside of that, getting additional supply agreements and also offtake agreements is something that we are now really focused on as the next step.

So once we've got the plant up and running and proving that we can do the scale that we intend, we're now next focus is selling the materials to good counterparties-

Mm

... and also securing enough supply that we can keep the plant running 24/7.

Is that where you guys sort of spend most of your time day-to-day at the moment, trying to sort of engage with various stakeholders and potential stakeholders?

Yeah. A big part of Steve's job is securing feedstock and also offtake, if you want to-

Yeah. Yeah, we have a kind of a wide range of offtake products from mixed metal chlorides to individual metal chlorides to metal chloride powders to separated metals.

Mm-hmm.

That's a very wide range. So we're working on getting those samples out to prospective offtakers that we are in detailed conversations with, such as Glencore-

Mm

... Indium Inc., and others.

Mm.

So that's all kind of a crawl, walk, run situation where we're optimizing the back end of the plant.

Yeah.

So that takes a lot of time. And then we also have significant opportunities where the US government is asking us to go do things.

Mm.

And so there'll be news coming out on that front here in the next four to eight weeks-

Mm

... where the government is basically teaming up with us to solve some supply issues that they see that are strategic in nature.

Yeah. Interesting.

Is that a little bit of a point of frustration?

I know that when a lot of the companies we speak with, dealing with entities that are much larger than yourself, you've got the usual internal bureaucracies things, and particularly when you're right on the cusp of things, I

don't know what you do to sort of solve it, but it can be frustrating waiting three weeks between phone calls-

Yeah

... and meetings when you're twiddling your thumb.

Or do you find that there's a bit more of a push behind things?

No, look, it is incredibly frustrating, and in particular with the mining companies. I've had a long history of dealing with mining companies, and for new technology, they want to be first to be second or third, so-

Right.

... it is a very slow-

Yes

... slog. And that's why we have chosen...

We could have chosen mineral processing and be proving

lithium concentrate processing or rare earth concentrate processing

at Texas, but it's just too hard. We were very progressive with a number of these mining companies-

Mm

... in terms of getting them to a point where we want to have a proper collaboration agreement and being able to publicly announce it, but they just weren't willing to allow us to publicly declare it.

So that's why we're focusing on e-waste.

We can go out tomorrow and purchase printed circuit boards on a very liquid market. So-

Mm

... that's the strategy. But yeah, it is very frustrating.

It took us over a year of dealing with this company, Indium Corporation-

Mm

... to allow us to be at a point of being able to announce an offtake agreement.

Mm.

So it's a very slow process. They've got their own agendas, and they move at a different pace than we would like to move at, so yeah.

Yeah.

It's a continuous frustration.

Yeah.

And look, we now have a supply agreement with Glencore, and again-

Yeah

... that took over a year.

Yeah.

And it was just through connections that we actually got the first contact in there.

Yeah.

So it's-

Yeah

... all about really who you know in the space as well.

Yeah. I've often used the phrase, "The overnight success that was 10 years in the making," and it's- You know?

It feels like there's a bit of a set up for that kind of thing there, where you go to that stage where you can't get arrested to the phone starts ringing off the hook, so.

Yeah.

And it's why those first-

Number of

contracts are so important because obviously you want to secure something, but also that signal, that social signal to the rest of the industry is like, "Well, if it's good enough for them, it's probably good enough for us." And it just feels de-risked, I suppose, for potential customers.

Yes. Yeah.

Yeah.

And that's why we were so focused on trying to get Glencore over the line.

Yeah.

Which we did in January.

Yeah. That's fantastic.

What are some of the things... I'll go to some of the viewer questions in a moment, but what are some of the things that you feel as though don't get enough air time or enough attention

from at least the investor side of the community?

When you're talking to groups like ours and that, and there's a lot of talk on capital raises and contracts and that, but I often find that there's other things that are sort of equally important but just don't get enough of a mention.

Anything that you would highlight in that area, or do you think for the most part that the market more or less gets it?

Yeah. So for me, originally when I first started in the role of the CEO, it was trying to figure out what message are we trying to get across about the company and what are we really trying to do.

And that's when I tried to split it up into these two categories of build, own, operate for the waste recycling and the mineral processing is processing as a service.

Yep.

Because it can get really confusing really fast if you start talking about all the different feedstocks and what we intend to do.

Because in mineral processing, we fit as an intermediate step in a flow sheet, whereas for recycling, it's more of a traditional end-to-end metal recovery. So this story can get quite confusing when you start mentioning essentially the periodic table is at our disposal.

Right.

But I suppose we now are, I suppose, being pitched as a printed circuit board e-waste recycling company, whereas in reality we're a bit much more broad than that.

Yeah.

There is this real opportunity in mining.

We've got these collaborations with Meteoric Resources, a rare earth company, and also UKOR, a rare earth technology company.

We have a collaboration with Vedanta, a major alumina company.

I suppose we haven't really spoken about either of those applications for quite a while. We haven't generated news on those for a while, but they're very still real applications. So it is a battle. It's also

for analysts, which pigeonhole that we're not really in the mining pigeonhole, we're not really in the industrials.

Mm-hmm.

We're somewhere in the middle, so it is quite hard.

We do have a peer company that we often get compared to, which is IPerion X. They've had a very similar trajectory.

They're about three years ahead of us in terms of their journey.

Mm-hmm.

So it's not just a market of one, but it is hard to try and pigeonhole us when some of these analysts that do cover different companies, which pigeonhole do they put us in?

We're not a miner, we're not a industrials, are we a specialty chemicals company?

Yeah.

So it is hard to, I suppose, fully articulate the true value that we're trying to create here.

Yeah.

And look, we're also looking at M&A opportunities.

It may not be a case that we're only a flash dual heating technology company in the future.

Yeah.

We may have other bolt-ons that complement what we're trying to do.

So effectively, I think we're a metal recovery

platform-

Mm-hmm

... is the broadest way to think of it.

Yeah.

I can appreciate that frustration.

Although, for what it's worth, I think, at least well I'll speak for our group, I'd like to think that we go a little bit deeper and think a little bit longer term. And it is very much my observation as well that the market likes a simple story.

Yeah.

Investors don't have a big attention span.

No.

And they don't like doing a lot of work.

No.

And I get it. But for those of us that do, I think

it's that deeper level of understanding that

is where opportunity lives. If

everything-

Right

... was super obvious and super straightforward, well, there wouldn't be the opportunity that there potentially is.

So I-

Yeah

... I get the frustration, but there's a part of me that goes, "Well,

I hope the market doesn't become too

deep in its thinking too quickly, at least."

Yeah.

Let me go to some viewer questions before we run out of time here.

So I've got some good ones from Cleo here.

In your third quarter 26 report, in figure four, indicative development and commissioning schedule, you foreshadow pilot scale batch process, metal production, and offtake for the last quarter of calendar year 2026. In light of that, when would you expect to see revenue starting to flow in?

We do hope to be actually making revenue in the very near term because we are currently producing metal chlorides, and we're using those more for internal use and optimization use before we're actually ready to sell those.

But in theory, we could start selling the material that we've recovered now.

We're just using that more for our commissioning purposes. But certainly by Q4, we want to be actually selling our products.

It won't be the fully metal, end metal, refined metal, metallic product.

They'll be metal chlorides, but certainly we want to be getting revenue in the door by around November, December time.

Yeah, great. It's always a great milestone.

Another one from Cleo. In setting out to isolate different metals, for instance, gallium and germanium, is it necessary to do separate FGH runs, or is it possible to isolate different metals in the one run through the FGH units, like in chromatography?

Yeah. So each feedstock has its own nuances, and what I mean there is some feedstocks, for example, the rare earth element

concentrates that we've tested, they normally have multi-flash runs at different temperatures. First flash might be to get rid of the impurity elements like aluminum and iron, as I say 300 or 400 degrees, then we will flash at a higher temperature to chlorinate all the rare earths. So each feedstock has its own recipe.

Mm.

And we do have options to either, if we're targeting multi metals to come over, and we then want to separate those multi metals, we've got the option to either flash all at once and get them all into a metal chloride, or we have this option to separate them out once we've flashed them into different metal chloride products. So we've got pathways for both.

And for the gallium and germanium material, for example, we took an approach that we made a combined gallium and germanium chloride product in the first instance, and then we took that metal chloride product and figured out what chemistry do we need to add to this now, like pH adjustments and stuff-

Mm

... to separate the gallium from the germanium into high purity products.

So, we can use the FGH or we can use post-processing chemistry to get the separation, and each feedstock will have its own kind of nuance as to what's the best approach. But it's quite flexible.

But the main message is we use a combination of the FGH plus post-processing chemistry to get the desired outcome, if that makes sense.

Yeah. Fascinating. Great questions, Cleo.

Another one here. I guess we've got some engineers in the group.

What is the longest continuous run, hours or days, that you've achieved with the FGH at target throughput thus far, and what type of recovery rates or economics have you observed?

In terms of the longest run, probably would be several hours of continuous running at this stage.

Yep.

And then in terms of capacity, to put that into a tons per day type capacity, I presume we'd be at currently,

in a single reactor, probably at around the half ton per day type capacity at that particular run rate.

And in terms of recoveries,

again, it depends on the feedstock, but for PCBs, the high level target is we're aiming for at least a 75% recovery of all the valuable metals in a PCB, and we've been comfortably hitting that target so far. We eventually want to take that up to 90% plus.

Mm.

But right now, we're not so focused on optimizing the recovery.

It's more about making sure that how we're adding the chlorine, how we're fluidizing the material, how the energy is added to the vessel, that's all optimized. And then once we've optimized those, then we're going to look at optimizing recoveries, with the eventual target of getting it all above 90% for gold, copper, tin, and then palladium.

Yeah. That's huge.

Well, I'm coming to the end of one my questions, guys, so I won't keep you for much longer.

I guess,

I probably anticipate the answer here.

I was going to say, what are the things that investors should keep an eye out for in the coming months? But I suppose watch those ASX announcement feeds, I guess.

Yeah. And even before we touch on that, one of the main overarching themes may be that 60 years ago, all the steel in the world was made with very large blast furnaces, 200 acres, billions of dollars worth of CapEx, massive employee crews, and reagent usage. And along came a company called Nucor who said, "We're going to use electricity to rapidly heat scrap and make steel using a mini mill."

Yeah.

And sure enough, all the blast furnace companies said, "Oh, it's too small. You can never scale it. Too much electricity.

It's a toy," whatever. And you fast-forward 60 years to today, and roughly 70% of all the steel in the world is made with electric arc mini mills using electricity-

Yeah

... to rapidly heat the metal. So the thematic here is that we are taking a page out of the Nucor playbook, we're applying it to non-ferrous metals and critical metals, and then we're bringing in the Metallium proprietary chemistry, and we're doing a chlorination using rapid electrical heating, and it's unlocking amazing opportunities for efficiency on metal refining.

Yep. It is such an interesting point, Steve.

That is across the spectrum of all technologies is my observation that there's that, I think, was it a Gandhi quote? "First they ignore you, then they laugh at you, then they fight you, and then you win." There is very much that element there and-

I like that

... it is wonderful thing for the challengers to

have almost a derisive view from the incumbents. It's the classic Kodak or Blockbuster or choose your-

Mm

... choose your analogy there because if some of these guys are a little bit more forward-thinking, there wouldn't be the opportunity that perhaps there is. So, yeah.

Absolutely.

It's a fascinating point. And let me just end by saying go science, go technology, go engineering because it really is the driver-

Yeah

... of human progress and I'd like to-

NASA were laughing at Elon Musk about 15 years ago when he set up SpaceX.

Yes. Yep.

They're not laughing anymore.

No.

Not laughing. And I tell you what, I reckon in the last week, especially with petrol prices doing what they're doing, the number of EV conversations that I have had, and it wasn't that long ago when the Prime Minister of Australia was saying that EVs would ruin the weekend or something crazy, right? So it's sort of...

I think the harder part is for those that do like to consider the future, is that once you see something, waiting for it, it feels like forever. But really, in an historical context, these things happen very, very fast.

The other saying I quite like is, "Gradually, then suddenly."

Yeah.

And

it feels like you guys are coming up to the suddenly part, so, I'll leave it there. It feels like a great place to finish. And, yeah.

Let's definitely do this again. I'd love to-

Yeah. Very much. Pleasure

... stay across the story.

Oh, thanks, Andrew, thanks for having us.

Thanks for having us. Great stuff. Cheers.

Thank you.

Thanks.