Avantium Half-Year Results 2023 Analyst Call

Wednesday, 16 August 2023

Participants

Tom van Aken – CEO

Boudewijn van Schaïk – CFO

Operator: Hello, and welcome to the Avantium 2023 Half-Year Results call. My name is Laura, and I will be your coordinator for today's event.

Please note, this call is being recorded and for the duration of the call, your lines will be on listen-only, however, you will have the opportunity to ask questions at the end of the call. This can be done by pressing star one on your telephone keypad to register your question. If you require assistance at any point, please press star zero and you'll be connected to an operator.

I'll now hand you over to your host, Caroline, to begin today's conference. Thank you.

Caroline van Reedt Dortland: Good morning, everyone, and welcome to this call. My name is Caroline van Reedt Dortland, responsible for communications and investor relations at Avantium. I'm joined here today by our CEO Tom van Aken and CFO Boudewijn van Schaïk. And we will start with Tom and Boudewijn running you through the press release on our results of the first half of 2023. After their presentation, there will be the opportunity to ask questions.

I need to point out that this conference call may contain forward-looking statements. You can find the disclaimers about forward-looking statements in the press release, also published on the Avantium website.

I would like to hand over now to Tom van Aken. The floor is yours, Tom.

Tom van Aken: Thank you, Caroline. Good morning, and thank you all for joining this morning. I hope you're doing well. I'll first run you through the key developments before handing over to Boudewijn, who will run you through the key financial highlights. We've made significant positive strides across our business over the past six months.

Let me start off with our FDCA technology. We're pleased that the construction of our FDCA Flagship Plant in Delfzijl remains on track and has progressed in line with our objective to start the production of FDCA in 2024. Over 90% of the associated procurement is now contracted. The warehouse and main control room are finished. We're in progress of installing equipment items and piping and have initiated cable pooling activities.

This morning, we have posted a video on our website that was shot last week by a drone showing the progress of the construction on site. It is helpful to compare this video with the drone video of earlier this year in order to comprehend the level of progress. We remain on track to start commissioning in the first quarter of 2024. Since the FDCA Flagship Plant is a first-of-a-kind facility, the commissioning and start-up of the plant will not be a straightforward, text book operation. We therefore plan to start-up various subunits of the Flagship Plant in different phases, to de-risk as much as possible and to ensure that the start of the production can take on as early as possible. We aim to start the production of FDCA in the second half of 2024.

We continue to see strong demand for FDCA and PEF in various applications and we have signed 14 offtake commitments so far. Over the past year, Avantium has increased its focus on the development of PEF for fibres and yarns, which can be used in different segments of the textile industry and applications including fashion. As you know, the FDCA Flagship Plant is a key component of our licensing strategy. The signing of the first technology license agreement with Origin Materials in February 2023, ahead of expectations, has helped accelerate discussions with other potential licensing partners. Avantium's commercial team is working together with Origin to secure capacity reservations for FDCA and PEF from the licensed facility. An example is the capacity reservation agreement with Terphane, as recently announced by Origin. We continue to pursue additional capacity reservations to support licensees.

Turning to our Renewable Chemistries business unit, our plantMEG technology is progressing towards the next phase of scaling-up to a Ray Flagship Plant. The intention is to take a positive Final Investment Decision on the construction of such a plant in 2025. This will require several key conditions to be satisfied, which are (1) finalizing the engineering and establishing the supply chain, (2) securing the financing for the Ray Flagship Plant, and (3) obtaining sufficient offtake commitments. Let me start with the first condition, the engineering and supply chain. We are advancing towards the Process Design Package phase, after having successfully executed several essential trials in the first half of 2023. On the supply chain, Cosun Beet Company intends to supply sustainable Dutch beet sugar to the Ray Flagship Plant. Moreover, we are currently in active negotiations to select the optimal site for the plant in the Netherlands.

Moving to the financing of the Ray Flagship Plant, we are very pleased that we secured a conditional grant award of €53 million by the Dutch National Growth Fund in June 2023. This is an instrumental step towards securing the overall financing for the Ray Flagship Plant. We are currently evaluating the financing strategy for the Ray Flagship Plant and we continue to explore additional financing options, including strategic equity, debt and additional grants.

We are also working hard on the third condition for a positive FID, which is obtaining commercial commitments for plantMEG and plantMPG. We continue to pursue active negotiations with interested partners to prepare for commercial validation and to potentially establish offtake agreements for this Flagship Plant.

I now move to our Volta Technology, Avantium's CCU solution. In the first half of 2023, we made significant progress towards a stage gate decision to construct a Volta pilot plant. This is supported by collaborations with the Asian chemical player SCGC and with the Norwegian aluminium and renewable energy company Norsk Hydro. As announced in June, Avantium and SCGC intend to further develop the CO2-based polymer PLGA and subsequently scale-up production of PLGA in the next two years to a pilot plant. Last summer, we signed a collaboration agreement with Norks Hydro to further apply Avantium's Volta Technology to develop innovative and sustainable solutions.

Finally, our R&D Solutions has successfully continued to implement its strategy to target sustainable chemistry opportunities. It secured additional orders in this field, while also progressing its existing R&D Services business.

I will now give the floor to Boudewijn to run you through the financial results in more detail.

Boudewijn van Schaïk: Thank you, Tom, and good morning, everyone. I would like to begin by pointing out that Avantium has prepared the unaudited half year figures for 2023 on a going concern basis. However, without additional funding, there is a material uncertainty in Avantium's ability to continue as a going concern. In preparing the financial statements for H1 2023, the company is required to take a view on the liquidity outlook for a 12-month period, including a sufficient buffer thereafter. In this liquidity outlook, the company felt that it was prudent not to assume the completion of funding plans that are under discussion with key stakeholders for both Renewable Polymers and the Company. We have, and will continue to inform the market that Avantium will require additional funding, and the company continues to explore and evaluate various funding options to strengthen its financial position. The Company intends to provide an update on this during the capital markets day in Q4 2023.

Total first half 2023 revenues increased to €7.3 million. This is mainly the result of increasing revenues in Avantium R&D Solutions, which grew by 12% to €5 million, . and the revenue recognized under the technology license agreement that we entered into with Origin Materials earlier this year. Although the first milestone payment of €7.5 million was received in the first half of 2023, under IFRS 15 we are required to recognize this over time. Based on a strong order book and project pipeline, Avantium R&D Solutions aims to deliver significant top-line growth in the second half of 2023 compared to the first six months of 2023

Other income from grants increased by 22% to €3.9 million in the first half of 2023, primarily related to recognition of grants related to the construction of the FDCA Flagship Plant.

Net operating expenses were €23.3 million in the first half of 2023 compared to €19.2 million over the same period last year. This increase is primarily the result of the planned increase in FTE over the reporting period, higher raw materials and contract costs, and other operating expenses largely driven by inflation, as well as higher development costs in particular related to the Renewable Polymers business segment. Total EBITDA loss increased to €12.1 million in the first half of 2023 compared to a loss of €11.0 million in the same period last year.

Moving to our Balance Sheet and Financial Position, Avantium's cash including restricted cash totalled €56.6 million as at 30 June 2023. The cash outflow amounted to €48.2 million in the first half of 2023. This is mainly related to an increase of planned investments in capital expenditure for the engineering and construction of the FDCA Flagship Plant. Regarding the costs for the FDCA Flagship Plant, we still expect the total cost increase to be in the range of €15 million to €25 million, as previously guided, and this remains under constant review. In the first half of 2023, we drew down €37.5 million under the €90 million financing with a consortium of Dutch banks and Invest-NL. This was followed by an additional €22.5 million in July 2023. We drew down €15 million in November 2022, and expect to draw down the remaining €15 million in the third quarter of this year. In addition to the bank financing, we secured and accessed an additional loan of €2.5 million provided by the Fonds Nieuwe Doen in the first half of 2023. Avantium Renewable Polymers is in active discussions with its shareholders and the lenders to ensure that sufficient contingency is in place until the FDCA Flagship Plant is fully commercially operational. Looking at Avantium, we continue to explore additional financing options to ensure that the Company remains adequately funded to execute its business strategy. In this regard, Avantium is working with banks to assess the options available to us. As previously mentioned, we expect to provide a further update in this regard during our Capital Markets Day later this year.

This concludes our statement. I like to ask the operator to open the line for questions to Tom and myself.

Operator: Thank you. Ladies and gentlemen as a reminder, if you would like to ask a question, please press star one on your telephone keypad. Thank you. We'll now take our first question from Andres Castanos at Berenberg. Your line is open. Please go ahead.

Andres: Good morning. A couple of questions from me. The first one is on the nature of payables. It's a big amount and I wanted to understand how long can they be rolled forward and what is the outlook for this amount.

My second question is about the catalyst division, which used to be profitable. Now it has been bundled into the new R&D division, and I wanted to understand what is the new normal for in terms of profitability for this division going forward. Thank you very much.

Boudewijn van Schaïk: Thanks very much for your questions. So on your payables question, indeed, we also saw that at the end of 2022, we had quite a significant payables amount on the balance sheet. This is largely related to the invoicing that we received from Worley, our EPC contractor. In this case we received an invoice towards the end of June and this still needs to be paid within the normal payment terms. So it's really because these invoices are quite large it's totally driven by the timing of receiving these invoices from Worley.

Then on the R&D Solutions business. What we've seen that there's two things that have contributed to this. You are correct that we've reported a small negative EBIDTA for this business segment. There's two factors driving that. One is we are investing in growing the business line with the new strategy we announced last year, so focusing more on sustainable chemistry. So that's increasing FTE, marketing, travel etc to grow the business. And at the same time for the actual equipment we're building or for the sales, we see a slight delay in revenue recognition driven by delays in supply chain. We recognise revenue on a percentage of completion basis. So with some parts coming in later than expected, we are behind on revenue recognition. It's a combination of those two; lower revenues and increased OpEx that have led to a negative EBITDA for the first half of this year.

Andres: That's very clear. Thank you very much.

Tom van Aken: I think if you look in the longer term, we think that the RDS profitability is not going to be different than it has been in the past. So I don't think that what Boudewijn reported on the first half of the year is giving any indication for the long-term profitability of this business. We think that if you look in the past, I think the type of margins that we've achieved in this business are pretty a good indicator for how does this business going to be developing over the coming time.

Andres: Understood. Well noted. Thank you.

Operator: Thank you. We'll now move on to our next question from Patrick Roquas from Kepler, your line is open. Please go behind.

Patrick: Thank you, operator. So, good morning, gentlemen. Two questions from my side. The first one is on the amount of capital you expect to invest in the FDCA Flagship Plant in the second half in 2024.

And the second question relates to Origin Materials, which signed a license deal with you. There was quite some news flow coming from this company. They seem to have switched gears or accelerate the expansion for the commercialisation of FDCA at the expense of bioPET. So that seems to be in favour for you guys, but at the same time, the share price took a massive dive. So what is the read-through from their press release for you? Thank you.

Boudewijn van Schaïk: Thanks, Patrick. Again, I can't give you a very precise answer there because in line with what we see on the accounts payable as well, the CapEx is partly dependent on the timing of invoicing from our EPC contractor. But what I can say is we do expect CapEx for the second half of the year to be in line with the first half of the year. And then coming down in 2024 as we move towards the completion of construction, the commissioning of a plant, and then moving into operations.

Patrick: Thank you.

Tom van Aken: Okay. Let me move to the second question Patrick, on Origin Materials. I think you rightfully indicated that they have made some important announcements last week in their earnings call. I think overall you can see that you know, there is a very important strategic choice towards FDCA and PEF, which as you can imagine, we think is really largely in line with our view on how the market of these biomaterials is going to be developing. So we're pleased to see the progress. We also are pleased to see the commercial progress at Origin. And the interest there is in FDCA and PEF. Most of the increased capacity reservations are linked to FDCA and PEF. So, we think that is very favourable for the joint effort of Origin and Avantium to be building that hundred thousand tons licensed facility.

Of course, they've also made a few other announcements during the call related to timing and related to CapEx. And they were clearly not taken in a positive way by investors. This has caused some really strong turbulence with regard to the share price of Origin. But I think when it comes to FDCA and PEF, we think that what they've announced was actually largely positive.

Of course, you've asked us before in the past about the timing of the licensed facility. It is not up to us to comment about this because the execution is going to be done by Origin. But I think that in our own experience with the design and engineering of these plants, the structuring of these plants is very much aligned with the timeline that they have indicated last week. So, I think in that sense, their plan is pretty much in line with our own expectation and experience.

Patrick: Okay. That's very helpful that Tom, thanks a lot.

Operator: Thank you. As a reminder, once again, if you would like to ask a question, please press star one on your telephone keypad. Thank you. And we'll now take our next question from Fernand from Degroof Petercam. Your line is open, please go ahead.

Fernand: Yes, good morning. A couple of questions from my side. Coming back on the previous question, they paid you seven and a half million as milestone fee already, but in your cashflow or in your report, you say, I have only €1.9 million revenue recognition. So, what happened to the other €5.6 million? Because I don't see that back in the cashflow statement. That's the first question.

Original Materials clearly said that they need to find additional funding for their Origin two. So, what if they don't find that additional funding and at someday say, "Okay, we are going to cancel." What does it mean for you then? And then on the financial cost: they were up to four and a half million euro cash outflow but for interest payments, only 1 million. So what's the difference in this cashflow per statement?

And then also if you see a similar kind of CapEx in the second half and you still had €56 million cash resources, why already draw the other to 22 and a half million euro in July and the remainder in Q3? And what should we expect on interest expense for the second half, given the fact that you take now the almost full loan of facility already in the third quarter?

Boudewijn van Schaïk: Thanks, Fernand. On the revenue recognition, indeed, we only recognised €1.9 million of the €7.5 million in accordance with IFRS 15. So we'll be recognising that over time as we meet the performance obligations under the contracts. Just to be clear, this is IFRS, not necessarily the contract itself.

I'm sure and we can take this offline, but it is certainly recognised in the cashflow statement. I wasn't entirely clear on your cashflow question, the €4.6 versus the €1.9. So maybe if you wouldn't mind just repeating that or if you can be a bit more specific, what you're looking for.

Fernand: Well, you said you have seven half million payment received from Origin. Then you had €1.9 million revenue recognition. So somewhere in the cashflow statement, should we see €5.6 million coming in?

Boudewijn van Schaïk: Okay, thanks, Fernand. So in the cashflow statement, it's recognised as working capital deferred income. So that's where it's been allocated. That's where you'll find the difference between the two amounts.

Just on your question on the drawdowns, so it's a fair observation in terms of cash position and timing of the drawdowns. We don't have an obligation under the financing agreement to pursue a specific drawdown schedule, but we do have certain technical milestones that allow us to draw down. There's reviews done by the lender's external technical consultants, and there is a process that's followed for these drawdowns and also in line with expected CapEx and invoicing from our EPC contractor. So the drawdown schedule is very much in line with our expectations of the cash flows for the project, and that's why we did pursue the drawdown in July and are now pursuing the final drawdown in the third quarter for the facility.

And on the interest expense, so that interest has gone up quite significantly compared to the first half of last year, largely driven by the drawdown a month under the financing, plus the commitment fees on the undrawn portion of the financing, at least for the first half of the year. Obviously, that'll fall away as we've fully drawn it down, and we'll just have interest expense going forward.

Fernand: And maybe one question on the timing of the FDCA plant. I think the wording is a little bit different as what you said at the full year 2022 publication. You're now saying commissioning commences in Q1 and then start of FDCA production in the second half. Is that a little bit different than what we had in the past?

Tom van Aken: I think what I said in March, is that I regretted that we had focused on mechanical completion because I think ultimately that's not the real good indicator to be looking at. I think what's more important, is commissioning and ultimately, of course, commercial operations date. And if you look at mechanical completion and commissioning are sort of done in parallel because certain parts of the plant can already be commissioned while we are still completing other parts of the plant.

The part I think that has been consistent is when we look about the commercial operations date, we I think I've said in 2023 or 2022, in the middle of 2024, we're now saying in the second half of 2024, that is actually to buy us a bit of time because it's a first of a kind facility. It's not that we have a real shift in the schedule, but we recognise of course that starting up a first of a kind facility is something, like we said, it's not textbook, it's not something that has been done before. So we want to buy ourselves a bit of a room here in case things are not going straightforward from the get-go.

But I think that for most people that have experience in the industry, that will be seen as highly logical. And if we successfully succeed in starting up the plant in the second half of the year, I would see that as a major success of the Company.

Fernand: Thank you. Can you come back on the Original Materials question?

Tom van Aken: Yes. It's not on us to comment on behalf of Origin. We know of course, how they plan to finance that facility. They have access to a bond programme which is I think quite a unique in the US. But of course, we are in continuous dialogue about how they're moving forward with that facility. They have made statements about how they're going to be running their project in terms of phasing it in two different phases, but also with a very clear focus of OM2, towards FDCA and not towards bio-PET.

I want to be very clear that we're very pleased with the licensing deal with Origin. We clearly don't want to be totally dependent on them. So therefore, I'm also really pleased to see the progress we're making with other industrial partners that we're talking to about licensing agreements because ultimately, FDCA and PEF are going to be of such a size in terms of market potential that we need to have multiple licensees to produce sufficient volumes in order to satisfy the needs of our customers.

We do expect that there're going to be a number of other industrial partners that are going the same way in order to satisfy the market for FDCA and PEF.

Fernand: Thank you.

Operator: Thank you. We have no further questions in the queue currently. As a final reminder, if you would like to ask a question, please press star one your telephone keeper. Thank you.

We'll take our next question from Wim Gille from ABN Amro, your line is open. Please go ahead.

Wim: Yes, a very good morning. I got a question on Origin and apologies if I ask the same question again, but I was cut off from the call earlier so I missed a bit. But to what extent are the offtake agreements that you signed for your FDCA Flagship Plant influenced or impacted by the potential capacity that Origin is bringing to the market and where in the process is Origin in terms of filling up their capacity for FDCA?

Can you give us a bit of an in indication how many other license agreements you are currently actively discussing and if it is the same order of magnitude as Origin, or are we talking about different size projects here? Thanks.

Tom van Aken: Thank you. So let me first talk about the offtake agreement part with Origin. I don't think, by the way, that was answered before, so that is not going to be double. So, our own offtake agreements are not going to be impacted by agreements that Origin Materials is signing because these are commitments that people have made towards Avantium and our Flagship facility. But it's highly logical for some of these customers that they are looking to secure much larger volumes for the future that we are unable to make in our Flagship facility. So therefore, if you look at, for example, Terphane, they're going to be sourcing material from Avantium's Flagship facility, and once the OM2 facility and licenced FDCA facility is running, they will then also start using FDCA coming out of that facility. So we are doing this in partnership with Origin, and I think in that sense we see this as a very logical next phase for offtake customers to be talking to Origin about further capacity reservations and offtake agreements for larger volumes that we are unable to supply from our Flagship facility.

So this is all done in very good partnership and of course, Origin has also signed offtake agreements with companies that we are not interacting with. And in that sense, they are able to secure additional demand that is not coming from us, but it's coming from their own customer base.

I don't think that they've made any statements about the percentage of capacity that is covered by these offtake agreements. That is of course not something that we can disclose as a licensing partner. But I do think that most people have a lot of faith in the level of capacity reservations that they have. They have crossed a $10 billion marker. So I think from a commercial side, I think things are looking quite positive.

Then to your next question, our dependence on Origin and where we are with other licensing deals? We have a pipeline of other licensing deals across the globe in different phases of negotiation. Of course, it is something that we have been paying additional attention to since our first licensing deal with Origin. So we are strengthening the team and are increasing our efforts. I'm not in a position to make a statement about how many companies are on that list but we see that there are lots of things happening with companies. I think that those companies see the potential for FDCA and PEF and therefore are interested to make these products on an industrial scale.

We do believe that people are going to be first looking at a similar scale as the licensed facility of Origin. And once these hundred thousand tonnes plants are operational, that will be a logical point to be looking at even larger scale facilities. But I don't think that it's logical to expect that people will be scaling up from a 5,000-tonne flagship facility to facility for making FDCA much larger than 100 kilotonnes.

The other thing that you need to take into consideration is that there are companies that are interested to be using existing infrastructure. So to see if they can retrofit existing assets to make FDCA. That is something that is a very interesting option because that will significantly reduce the need for capital to be put into the grounds because then you can use existing infrastructure and assets for producing FDCA. And that would of course greatly help faster deployment and faster scale-up of FDCA.

The coming years will tell us basically if that is going to work and how fast this is going to work, how easy that's going to be. And we will keep you updated on any progress that we will be making there.

Wim: Thank you very much.

Operator: Thank you. We'll now take our next question from Reg Watson at ING. Your line is open. Please go ahead.

Reg: Morning, all. I've got quite a few if I may. So, I'll start with the ones directed at Tom first, please. Morning, Tom. You mentioned 14 14 offtake agreements for FDCA. When I last counted last year, I came to 10. And since then, you've added Origin and Henkel. So who are the additional two that I've missed?

Tom van Aken: Kvadrat you've missed and I think Monosuisse you've missed.

Reg: That's helpful. And then in your release today, you mentioned the fact that the deal with Origin has accelerated the discussions with other potential licensees. Can you give us an indication of sort of timing of announcements that you expect as a result of this acceleration?

Tom van Aken: Yes, Reg, I was already expecting you to ask that. So, of course, I'm going to be cautious here with giving you too much indication here, because it's always difficult as these things are not under our control. They are under control by our partners. I think it is safe to say that we expect that other partners will want to see the Flagship Plant to be operational. So they want to basically wait for the commercial operation state of the Flagship facility. That is a safe assumption.

Of course, there may be companies that want to do this faster because ultimately there's also going to be a race between different companies. But I do expect that the larger companies that we are interacting with are going to be more conservative than Origin has been, and therefore we expect that they will wait to see that the Flagship Plant is operating before they're going to commit to this.

Reg: So presumably that means we shouldn't expect to see anything till 2025 then if they're going to see the output in 2024?

Tom van Aken: If there's going to be anything in 2024 that will be a significant windfall for the company.

Reg: Okay. Understood. That's helpful. Thank you. And nobody's asked about the the developments in plantMEG and plantMPG that you mentioned in the release. Could you expand on that please? What do you mean by the developments there?

Tom van Aken: Yes, so I think in terms of let's say technical progress, we've made progress on some of the key trials that we had to do before we can initiate the next phase of engineering. So that is very positive technical progress. And of course, in addition, we've signed the 53 million conditional grant of National Growth Fund which is of course a very significant grant. I think it's the largest grant that Avantium has ever been rewarded in its history. So that's not something to belittle in that sense. And that will be a great help to secure the total funding of the construction of the plantMEG Flagship facility.

Reg: Yeah, I was going to ask about that. Is that sufficient to fund your share of that facility? €53 million?

Tom van Aken: No, Reg, I don't think it is. It's of course an important part of the total financing package. We do expect that there's going to be a mix of equity and debt as well as other grounds are going to be required in order to basically complete the picture. What we need to have, and I think we've alluded this before, you need to have more accurate numbers on CapEx, and that's why we need to do the next phase of engineering in order to get to a more accurate number for the capital expenditure. If you look at all these CapEx projects around the globe all of these projects have become more expensive because of inflation, but of course also because capital costs are going up. So these are things that we have to factor in.

We still have two years basically in order to put all the pieces of the puzzle together on making this business case work. It is a bit early for me to tell how exactly that's going to look like, because that is still something that's another discussion with partners and with other financiers.

Reg: Okay. Sorry, Tom, did you say two years or three years?

Tom van Aken: Two years.

Reg: Three years. Okay. That's great. Thank you.

Tom van Aken: No, two. 2025, that's what we will expect to make our Final Investment Decision for Ray.

Reg: Okay, great. Thank you. And then you referred in your earlier comment to some of the licensees, potential licensees for FDCA looking at retrofitting terephthalic acid facilities. I thought that wasn't possible.

Tom van Aken: So I hope that all the analysts, who don't have a chemical background will buckle up for this part of the call. So you are right. If you look at the process for us to make purified FDCA, they're basically three parts. It's the sugar dehydration, that's something where we need new assets. It's not something you can use existing assets for. After the sugar dehydration, you have MMF and MMF is something that you then oxidize. So you react with oxygen in the presence of a catalyst and subsequently you purify it. The oxidation and purification processes are things that we think we can do in existing terephthalic or isophthalic acid plants. They are present around the globe on enormous scale, but also, when the PTA business started up companies have built smaller scale plants. So there are lots of these assets around the globe that we potentially can retrofit for producing FDCA.

They're called oxidation assets, and we do think that we can retrofit them. What I mean with retrofitting is there's still a significant amount of CapEx is going to be required to make changes to the hardware and the assets in order to run our process because it's different chemistry. But in principle if you look at how to make terephthalic acid, you oxidize it together with oxygen in the presence of a catalyst, which is exactly what we use. We use the same solvent system, similar type of catalyst, same type of titanium vessels. So I think in that sense there's a lot of similarity and therefore this seems to be a very attractive way to be doing this and to accelerate the deployment of the large production of FDCA.

Reg: Okay. And similar temperatures and pressures?

Tom van Aken: Yes, correct. There are of course some differences and that's why you need to make some hardware modifications and you have retrofitting. So it's not that you can run exactly the same assets without making any hardware modifications. You do need to make some hardware modifications. So, some level of investment is going to be required.

Reg: Okay. No, that's understood. Thank you. That's great. Thanks for the explanation, Tom. And now Boudewijn, can I just confirm your cash burn because I think the last guidance you gave is roughly €15 million a year and I just wanted to check that that's still the case because first half is roughly eight, but just wanted to give you an opportunity to perhaps update us on that.

Boudewijn van Schaïk: Yeah, that's right. I'll keep it simple. I would stick to the guidance of €15 million.

Reg: Okay, that's great, thank you. And then to then come on to the sort of the big disclaimer you made in the prepared remarks, please help me through this because I'm a little confused. You basically said that we shouldn't assume that Avantium is a going concern 12 months out, but if I look at the cash on your balance sheet as of today and the cash burn you should still be a going concern 12 months outside. What have I missed here?

Boudewijn van Schaïk: Yeah, it's a bit of analytical process that we go through to look at certain scenarios on projections on liquidity, CapEx funding, etc. And we need to look at the 12-month period plus a buffer thereafter. So again, it's a bit subjective in terms of what we look at and taking all factors in consideration, we felt as management it was more prudent to guide on the risk of a material uncertainty than to categorically state that there is no risk. So it's our assumption but we think it is a fair assessment to make given the data we use to come to this conclusion.

Reg: Right. Okay. And then obviously within that sort of disclaimer, you also made it clear that you expect to need additional capital. I appreciate you also said you'd explain that at the capital markets day later in the year, but can you give us an indication on how you expect to raise that additional capital?

Boudewijn van Schaïk: I would be cautious now indeed, because we are in discussions with banks and with our stakeholders. We are looking at various options we have available to us. And I think that there's quite a few. So, we need to make some decisions in the coming weeks and then elaborate on this at the capital markets day. So I think it would be a bit too early for me to make any sort of indications of what we could be considering.

Reg: Okay. That's great. Have you set a date for the capital markets day yet?

Boudewijn van Schaïk: Not yet, but we will soon.

Reg: Okay, great. Thank you very much. Thank you, Boudewijn. Thank you Tom.

Operator: Thank you. There are no further questions in queue. I'll now hand it back to Caroline for closing remarks. Thank you.

Caroline van Reedt Dortland: Thank you all for your questions and listening in. And of course, we're available for any other questions you may have. Please feel free to reach out to us and we'll be happy to provide more information wherever it's needed. Thank you everyone, and have a nice day.

Operator: Thank you. Ladies and gentlemen, this concludes today's call. Thank you for your participation. You may now disconnect.

[END OF TRANSCRIPT]