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PRESENTATION

Operator
Good morning, ladies and gentlemen, and welcome to the Umicore Half Year Results 2021 Conference Call.

(Operator Instructions) And just to remind you all: This conference call is being recorded.

I would now like to hand over to Mr. Marc Grynberg, CEO; and Mr. Filip Platteeuw, CFO. Mr. Grynberg, please go ahead, sir.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Thank you, Barbara. Good morning, everyone, and welcome to the presentation of Umicore's results for the first half of this year.

In a moment, I will talk of the many business developments as well as the outlook for the full year before handing over to Filip, who will take you through the financials. I will then wrap up before opening up the call to your questions.

Looking at the highlights first. I'm proud of the results which we achieved in the first half of the year and which were driven by an exceptionally strong performance across business groups. Revenues were up

37% year-on-year. Adjusted EBIT was up by 157%, and the return on capital employed exceeded 28%.

When looking at the year-on-year comparison, one should, of course, bear in mind that our results in the first half of last year were heavily impacted by the severe downturn in most of our end markets, particularly in the automotive industry, as a result of the COVID-19 pandemic. Also, our results in the first half of this year were boosted by extremely high prices for certain precious metals. While the pandemic is unfortunately not behind us yet, the recovery which took shape in the second half of last year has gathered steam. And in the first half of this year, we benefited from a sharp upturn in demand across businesses, in particular from the automotive industry. This was combined with a robust operational performance, which also contributed to reaching all-time-high results.

Revenues and earnings in the first half grew across all 3 segments. In Catalysis, we continued to outperform the automotive market, and this by a significant margin. In Energy & Surface Technologies, we saw substantial growth in the sales volumes of cathode materials as anticipated, combined with very strong demand in the other activities. In Recycling, we achieved a record performance driven by record precious metal prices, strong demand across end markets and regions as well as excellent supply and trading conditions. I would also like to point out that our cash flows increased substantially, and Filip will elaborate on this topic in a moment.

As we announced in February, we have amended the dividend policy. And the interim dividend will, from now on, consist of a fixed amount of EUR 0.25 per share. This interim dividend will be paid out on 24 August. Our policy of a stable to growing full year dividend remains unchanged.

Looking ahead now, I expect adjusted EBIT for 2021 to come out slightly above EUR 1 billion, assuming that metal prices stay more or less around their current levels. You will recall that, in April, I expected the full year adjusted EBIT to approach EUR 1 billion. And the slight increase in guidance reflects the stronger-than-anticipated performance in the first half of the year, which was primarily due to the spike in precious metal prices and very strong demand in Cobalt & Specialty Materials and Metal Deposition Solutions. In April, we indicated that the boost from precious metal prices compared to 2020 was about EUR 250 million, and based on the current prices, this is still valid. As we also explained in April, adjusted EBIT in the second half of the year is expected to be lower than in the first half, taking into account the planned maintenance shutdown of the smelter in the Hoboken recycling facility starting mid-September. The first half of 2021 also included a spike in precious metal prices, while the outlook assumes flat prices in the second half. Finally, we expect automotive production in the second half to be hampered by the global shortage in semiconductor chip supply.

In Catalysis, I expect that we will continue to outperform the automotive market and that we will more than double adjusted EBIT this year compared to 2020. Revenues and earnings in the second half of the year will, however, be impacted by more subdued demand in the automotive industry due to the ongoing shortage in semiconductors. In addition and as anticipated, heavy-duty diesel catalyst sales volumes are expected to be lower in the second half compared to the first half of this year following the phaseout of China 5-compliant catalysts.

In Energy & Surface Technologies, I expect that full year adjusted EBIT will grow meaningfully and may slightly exceed the current market consensus. We should bear in mind, though, that the stronger-than-anticipated performance in Cobalt & Specialty Materials and Metal Deposition Solutions in the first half is expected to normalize and should therefore not be extrapolated to the second half. In Rechargeable Battery Materials, I expect substantial growth in sales volumes of cathode materials this year to more than compensate the anticipated EUR 50 million increase in fixed costs versus last year.

In Recycling, we are off to a new record performance, with adjusted EBIT in 2021 expected to be well above the previous record level of last year. I expect this record performance to be achieved through a combination of very high precious metal prices, robust operations, excellent supply and strong growth across business units and regions. The first half performance should not be extrapolated to the second half, though, as the spike in precious metal prices seen in the first half is not assumed to reoccur in the second half. And the smelter in Hoboken will undergo a planned maintenance shutdown as of mid-September.

Before moving on to the business review, I would like to repeat some of the key messages of the ambitious "Let's go for zero" sustainability strategy that we announced early June. As a long-standing pioneer in sustainability, we have reaffirmed our commitment to sustain industry leadership by setting truly bold ambitions and thereby raising the bar both for ourselves and our industry. By bold, I mean that we go for zero: net zero greenhouse gas emissions by 2035, zero inequality and zero harm. The ambitions that we have set ourselves are stretched, first and foremost, because these are the right things to do. Also, a growing number of customers incorporate sustainability criteria in their supplier selection process, and our sustainability performance and trajectory are becoming greater competitive advantages. I would also like to remind you that sustainability at Umicore is not only about minimizing the impact of our operations. It is also about having a positive impact by making best use of our capabilities to address key societal challenges such as the need for cleaner mobility or a circular economy.

Let's now turn to the business review. Slide 8 recaps the key figures for the first half of 2021, which Filip will comment in more detail in a moment. I therefore propose to turn immediately to Catalysis.

Car production has continued to recover from the lows seen in the first half of last year. The graph on Slide 10 shows the market development month by month against the previous 2 years. You can clearly see the severe impact of the pandemic last year followed by a strong rebound now. Although we are not yet back to pre-crisis levels, global car production across powertrains was up 30% in the first half of 2021. After a buoyant first quarter, sequential growth in car production in Q2 reflected an initial impact of the global semiconductor shortage, and this impact is expected to persist in the second half of the year. Without this shortage affecting production at our customers, the growth in Automotive Catalysts sales in the first half would have been even more pronounced.

This brings me to the next slide, where you see that in Catalysis revenues were up by 59% year-on-year. Adjusted EBIT stood at EUR 204 million compared to EUR 21 million in the same period last year, and this was supported by very strong revenue growth as well as cost savings and high PGM prices. Because of the particular situation of the automotive industry in the first part of last year, a comparison to 2019 may be more relevant. And the growth in adjusted EBIT from EUR 87 million 2 years ago to EUR 204 million this year speaks for itself. In Automotive Catalysts, we substantially outperformed the automotive market both in volumes and revenues. This was primarily the result of market share gains and a favorable platform mix, especially in the European and Chinese light-duty gasoline markets. We also continued to benefit from the shift away from diesel in Europe where diesel accounted for just 30% of the mix in the first half of this year. In heavy-duty diesel, we recorded very strong demand for our China 5 catalyst technologies in the first half ahead of the nationwide adoption of the new China 6 emission norm in July.

Still within transportation, sales volumes of our PEM fuel cell catalysts nearly doubled year-on-year, driven by very strong demand in China and Korea and significant customer wins in the first half of the year. In the Precious Metals Chemistry activities, we recorded strong demand for our homogeneous catalysts and also benefit from the very high precious metal prices.

In Energy & Surface Technologies, we benefit from accelerating growth in demand for EV batteries driven by a very strong traction in Europe and some recovery of demand in China. Against this backdrop, sales volumes of Umicore's NMC cathode materials to power EVs were substantially higher, particularly in Europe, with strong growth year-on-year and sequentially. Cobalt & Specialty Materials benefited from a stronger-than-anticipated post-COVID-19 recovery, especially for cobalt and nickel chemicals and tool materials. And Metal Deposition Solutions recorded strong demand across key end markets. These positive demand dynamics were, however, largely offset by a much lower contribution from the cobalt refining activities due to unfavorable pricing conditions for cobalt input materials. Currencies also had a negative impact on revenues of roughly EUR 25 million.

Overall, revenues for the business groups -- or the business group increased by 7% year-on-year. And adjusted EBIT was high -- was 44% higher, as the top line growth, combined with cost savings in Cobalt & Specialty Materials, more than compensated the anticipated increase in fixed costs related to the expansion in cathode materials and the step-up in R&D programs.

We have recently commissioned our brand-new cathode materials plant in Nysa, Poland. This plant is the very first industrial-scale cathode material production plant in Europe, and we are obviously very proud of that. And with hindsight, I'm happy that we have made the investment decision in 2018 so that we will be ready to move to mass production in Europe at the time the market is gaining significant traction. We will now start the qualification of production line with our customers, and I expect first commercial production volumes to kick in around year-end. I'm also proud that we have entered into a long-term power purchase agreement with ENGIE to supply our plant in Poland with 100% renewable electricity as of the start of production. This means that the production of our cathode materials in Europe will be carbon neutral from the start, which sets us well ahead of our peers and is an important step in our ambitious path to achieving net zero greenhouse gas emissions for the group by 2035.

Moving on to the Recycling business group, you can see in the graph on Slide 13 that we continued to benefit from an exceptionally supportive metal price environment, especially for PGMs. Rhodium and palladium price -- rhodium and palladium recorded all-time highs in the first half of 2021. Although the second quarter proved to be more volatile, the average received rhodium price in the first half of 2021 more than doubled compared to the first half of 2020. And in the absence of rolling hedges, Umicore was fully exposed to this favorable price evolution. While we had locked in a significant portion of the palladium and silver exposure, the average received price in the first half of the year was still well above the levels of the previous year.

Higher metal prices explained to the largest extent the increase in revenue and earnings in Recycling, although they are not the only factors. In Precious Metals Refining, our supply mix remained excellent and highly rich in PGM content. Also the operational performance was robust, which enabled us to process as much volumes as last year. As you might recall, we have adapted our capacities and capabilities to be able to treat more of these PGM-rich materials, and considering the current mix, we have been operating at optimal capacity. In Jewelry & Industrial Metals, we benefited from a strong uplift in demand for investment and jewelry products. And finally, Precious Metals Management took advantage of the metal price volatility to generate significantly higher earnings.

I will now hand over to Filip, who will provide more color on the financials.

Filip Platteeuw ***Umicore SA - CFO & Member of Management Board***
Thank you, Marc. And good morning, everybody.

As you've seen from the key financials at the start of this presentation, the group's financial performance in the first half of the year was exceptional in the history of our company. A number of drivers converged, resulting in record earnings. The main ones are strong volumes across -- growth through all of our businesses, record precious metal prices and cost savings from the recent footprint adjustments. These together far outweighed some earnings headwinds such as adverse currency rate movements, higher raw material costs such as for cobalt and higher fixed costs related to our expansion projects and additional R&D initiatives.

Metal results are particularly important to our group margins given they contribute in a quite direct way to the bottom line. And this is also what you can see reflected in the graphs on this first slide. Recycling was obviously the main beneficiary and additionally generated very strong trading results on the back of higher metal price volatility. Depreciation charges on group level were only slightly up year-on-year, resulting in an adjusted EBITDA trend that matched adjusted EBIT.

Looking at the full P&L. The operational line clearly drove the trend. Adjusted net financial costs were somewhat higher due to higher interest and ForEx charges. The first half of last year did not yet incorporate the charges related to the EUR 500 million convertible bond that we issued midyear. Adjusted tax charges increased proportionately to the pretax profit, as is reflected in a close-to-stable effective adjusted tax rate of 24.9%. This resulted in an adjusted net result for the group of EUR 428 million; and an adjusted earnings per share of EUR 1.78, close to 3x the first half 2020 numbers. We recorded a -- total adjustments to net results of minus EUR 28 million, which I will detail for you in a minute.

Looking now at cash flows. Close to half of the record EUR 836 million cash flow from operations generated in the period was converted into net free cash flow and allowed to reduce net financial debt by EUR 374 million from EUR 1.4 billion end of 2020 to slightly over EUR 1 billion end of June. This corresponds to slightly less than 1 turn of the last 12 months adjusted EBITDA. Net interest charges, cash taxes and dividends combined correspond to a cash-out of EUR 240 million. After a lower dividend payout in 2020 due to the COVID-19 context, Umicore's dividend payout in the period returned to pre-pandemic levels.

This next slide details the underlying trends of our operating cash flows. Cash flow from operations in the first half came in at a record EUR 836 million, and this included a decrease in cash working capital of EUR 30 million for the group over the period. However, this reduction includes approximately EUR 250 million of temporary positive cutoff effects at the end of June, which are seen to reverse in the second half this year. Underlying this, the combination of strong volumes and higher metal prices substantially increased working capital needs in Catalysis, as was anticipated. This increase was more than offset by a decrease in working capital in Energy & Surface Technologies as well as in Recycling.

Cash spent on CapEx and capitalized development costs amounted to EUR 180 million compared to EUR 167 million over the same period in 2020. As in recent years, E&ST accounted for approximately 2/3 of group CapEx, with the Rechargeable Battery Materials greenfield plant in Poland as the key project. For the full year, we currently expect a group CapEx of close to EUR 500 million, with most of this amount already committed.

This final slide provides some detail on the previously mentioned adjustments. The most significant adjustment to EBIT consists of a -- of EUR 41 million increase of the provision that was set up last year in Recycling for the creation of a green zone neighboring our Hoboken site. [In brief: The higher number] (inaudible) [expected] (inaudible).

Next to that, Catalysis recognized a negative adjustment to EBIT of EUR 24 million [relating to the costs to close the] (inaudible) plant in Denmark [as well as with the IP impairments]. However, [the stated] adjustment in Catalysis (inaudible) relating to (inaudible) Brazil (inaudible) ruling by the Brazilian supreme court (inaudible) [positive] EBIT adjustments amounted to EUR 32 million. (inaudible) adjustments (inaudible) amounted to a net (inaudible) adjustments (inaudible) [to a charge of] EUR 28 million.

This concludes my section. And I hand back over to you, Marc.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Thank you, Filip.

Before opening the line to your questions, I would like to recap the key messages of this call. I'm proud of the outstanding performance achieved in the first half of this year with significant revenue and earnings growth in all business groups as a result of strong demand, record precious metal prices and robust operations. The outstanding performance of the first half allows me to slightly raise the guidance for the full year. I now expect adjusted EBIT for the full year to slightly exceed EUR 1 billion, assuming precious metal prices stay more or less where they are today.

I'm also proud of our ambitious sustainability road map, which is truly setting us apart and is raising the bar both for ourselves and for our industry. It reaffirms a clear commitment to make best use of our capabilities to address key societal challenges such as the need for clean mobility and the need for a circular economy. In recent months, the fundamental trends which underpin Umicore's strategy have continued to get stronger. This is evidenced by a number of developments such as the EU Fit for 55 commitments to reduce CO_2 emissions by 55% by 2030 as part of the European Green Deal. In China, there is a similar commitment to achieve a carbon-neutral economy by 2060, while in the U.S. the recent release of support programs and incentives for cleaner mobility has unleashed a meaningful acceleration of car electrification plans. Globally, a growing number of car OEMs are stepping up investments to electrify their offering faster. They are also making clear commitments towards achieving carbon neutrality across their supply chains.

Beyond the outstanding performance of this year, the good news is that Umicore has the talent, the technological wherewithal, the closed-loop business model and the sustainability mindset, which are all required to capitalize on these trends.

Finally, on a more personal note, you have probably taken note that Mathias Miedreich will take over as CEO of Umicore on October 1 this year. This means that today marks my last earnings call for Umicore. And I would like to use this occasion to thank you for your long-standing interest in the company, for your support and for the enriching interactions that we have had over the years. It has been a privilege to lead Umicore since 2008, and I will leave Umicore in very good hands in October.

With this, I would now like to open the floor to your questions and I hand over the call back to the operator.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from the line of Mubasher Chaudhry from Citi.

Mubasher Ahmed Chaudhry ***Citigroup Inc., Research Division - VP***

I'll just start with one, I guess. On the chart that you showed about the LDV production rates by month, given that the IHS forecasts look to be down year-on-year for the second half, do you think we can expect the Catalysis business to grow in the second half year-on-year? Or if -- will the headwind from the kind of the chip shortages will be a bit too strong for us to see growth in the second half?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Mubasher, the -- it's difficult to make out today with any degree of accuracy because the chip shortages is creating some unpredictable situations that -- with the car manufacturers and sometimes some unpredictable mix effects as well. I will say that, from a volume point of view, car production is unlikely to grow compared to the second half of last year. As you may recall, that there was a strong rebound already in the second half of last year in global car production following some, in a way, catching up on orders following the pandemic effects of the first half. As far as we are concerned, I would like to remind you that next to volumes or earnings evolution is also driven by some other structural factors such as the positive effects of the footprint optimization and the cost savings that we have achieved over the past years and which are contributing in a visible manner to the performance and will continue to do so; and for the Catalysis business group entirely, the effect of higher PGM prices, in our assumption at least, compared to last year.

So all in all, I think that, yes, I can reaffirm with a high degree of confidence that we expect to have -- to double the adjusted EBIT for the full year, which implies indeed a continued strong performance in the second half, albeit not as strong as in the first half given the effect of the ship -- chip shortage on car production.

Operator

Our next question comes from the line of Alex Stewart from Barclays.

James Alexander Stewart ***Barclays Bank PLC, Research Division - Chemicals Analyst***

I wonder possibly if you could tell us whether the sequential volume growth in cathode materials in the first half of this year was mostly or entirely down to improvements in China or whether you also saw a sequential improvement in Europe. I ask because I thought that your Korean facilities were sold out end of last year. So I'm just trying to figure out if you managed to get more out of those half-on-half. It would be very helpful. And then I'll go back in the queue for my second question.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Alex, it's a combination. It's both, in a way. It's some recovery in Europe. It's -- sorry. It's some recovery in China. Although, I have to say that in China we didn't grow as much as the market did and because of how we are positioned in the market, the mix of our programs and the fact that some of the significant growth was actually captured by lower-range LFP vehicles which -- I mean, platforms which we don't serve. So it's partly China and partly Europe indeed.

Operator
And our next question comes through the line of Sebastian Bray from Berenberg.

Sebastian Christian Bray ***Joh. Berenberg, Gossler & Co. KG, Research Division - Analyst***
It's on the Catalysis segment looking at these 22% EBIT margins for H1, and the question is 2 parts. Why would higher PGM lead to a higher margin in this area? I haven't quite grasped how the pass-through works in the non-auto cats part. And secondly, more conceptually, given this business is benefiting from a number of tailwinds in 2021, including higher PGM, exceptional utilization in H1, do you think 2021 could feasibly mark peak EBIT over the next few years for this business?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Sebastian, on the PGM impact, some of the nonautomotive catalyst businesses have indeed margin -- sorry, pricing formulas for their products which are related to the PGM prices. And the higher PGM prices, the higher the prices or the margin that we make on some of these projects. So the -- while in the Automotive Catalysts business we have a pure pass-through model indeed. Secondly, in terms of margins, it's difficult to make out what to expect in the coming years in terms of margin and performance. If you read the industry projections, the market projections for the next couple of years, most, if not all, of industry analysts project a further growth in volumes in ICE production in 2022 and 2023, which would bode really well for the business and would not point to a peak this year or a nonrepeatable margin level achieved this year. So it will depend on a number of factors. The jury is still out how will auto production develop in the next few years. If you look at the entire catalysts segment and how will the PGM price develop and because that has some impact on the margin level as well, difficult to make out today, but clearly I'm not as negative as some observers are regarding this business [group].

Sebastian Christian Bray ***Joh. Berenberg, Gossler & Co. KG, Research Division - Analyst***
That is helpful. And all the best for the future, Marc.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Thank you.

Operator
And again -- the next question comes from Jean Rolland from Bank of America.

Jean-Baptiste Henri Rolland ***BofA Securities, Research Division - Associate***
I would like to understand a little bit better around what's going on with the cobalt effects in your energy

and surface technology division. When it comes to the -- I understand that scope has pressured the margin and is a net negative as a result of the prices being up. Can you just explain to me why that's the case and if you're facing the similar problem with nickel or whether it's specifically a cobalt issue?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Jean-Baptiste, it is specific to cobalt and -- today. And it is really related to the supply-and-demand balance for cobalt input materials. We're not talking about cobalt metal. We're talking about input material for refineries, whether it's hydroxide or other impure forms of the material. And the supply is somewhat short of demand today, which means that there is a significant -- there has been since the beginning of this year -- or since the end of last year and beginning of this year a very significant, I would say, increase in the payables for these raw materials indeed.

Operator
Our next question comes from the line of Ranulf Orr from Redburn.

Ranulf Orr ***Redburn (Europe) Limited, Research Division - Research Analyst***
Just on the ramp-up of the Poland plant. Could you give us an idea of what the ramp-up schedule sort of looks like, how long it's going to take to get from first commercial volumes at the start of next year to sort of complete at sort of 100% utilization?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Ranulf, well, hopefully, as fast as possible, clearly. Well, realistically speaking, that's it will take a while because the qualification programs are typically tedious and lengthy. That's one. And secondly, it takes time then for the physical, the effective ramp-up of the lines, so difficult to give you, I will say, I mean, an accurate figure to or an accurate time to model, but I will say it's not a matter of weeks. It's a matter of months. It may take a year or so or more, to slightly more than a year to ramp up the capacity, so it's -- which is normal for this type of complex operations and the -- and especially for a new operation or a greenfield.

Ranulf Orr ***Redburn (Europe) Limited, Research Division - Research Analyst***
Okay. And just to clarify then: So by the end of 2022, the plants will be -- will have no spare capacity left if sort of things go to plan.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Normally. Indeed that's a rough time frame to bear in mind. And that's why we have already initiated the next wave of -- or the first wave of expansion of the plant, as you will recall from the communication we did a few months ago. It's because we need to be ready with the additional capacity sometime in 2023 already, absolutely.

Operator
Our next question comes from the line of Geoff Haire from UBS.

Geoffrey Robert Haire *UBS Investment Bank, Research Division - MD and Equity Research Analyst*
Marc and Filip, I just wonder if I could ask about E&ST. You reported 7% increase in sales, but yet you talk about very strong demand for cobalt products but also for EVs as well. And we can obviously see that in the market. I just -- there seems to be a bit of a disconnect as to why sales are so low year-on-year if some of the businesses within it are growing so strongly. I just wonder if you could explain that.

Marc Grynberg *Umicore SA - CEO & Member of Management Board*
Yes. Geoff, well, the volume growth in some of these businesses was somewhat offset by negative currency effects which Filip mentioned a moment ago. And these are material enough -- were material enough to be mentioned; if my recollection is correct, EUR 25 million in the first half. So that's a big amount for just 6 months of operation. And secondly, we have this significant -- this material negative effect from the cobalt refining activities which I also commented on a moment ago. So these are the key elements that explain this apparent disconnect between the sales and the earnings development. Filip, did you want to...

Geoffrey Robert Haire *UBS Investment Bank, Research Division - MD and Equity Research Analyst*
[Got it, okay]. I just have a follow-up. Was the impact -- the negative impact from -- on the cobalt refineries, was that bigger than the FX hit?

Marc Grynberg *Umicore SA - CEO & Member of Management Board*
It's -- we prefer not to quantify that. It's material enough to be mentioned.

Operator
Our next question comes from the line of [Ethan Udeshi] from JPMorgan.

Chetan Udeshi *JPMorgan Chase & Co, Research Division - Research Analyst*
It's Chetan actually. A few questions. First, Marc, can you sort of help us understand how much of the EUR 250 million benefit that you are expecting for full year from PGM prices was already seen in first half? And if possible, if feasible, if you can split how much of that was between Recycling and the Catalysis division. And the second question was I'm curious given the ODM price moves that we've seen in the last 2 months. Why is that EUR 250 million still EUR 250 million and not lower? Any insights there will be useful.

Marc Grynberg *Umicore SA - CEO & Member of Management Board*
Chetan, I'll take the first part and will leave the second part of the question to Filip. The majority of the EUR 250 million is in the first half, which is also understandable if you look at the price movements of the first half; and in particular despite what we've seen in the course of the first half and the current level, which is somewhat lower than what we saw earlier this year. So the majority is in the first half. And in terms of the distribution, the majority, the large majority, of the effect is in Recycling. And Filip, perhaps you'll take the next...

Filip Platteeuw ***Umicore SA - CFO & Member of Management Board***
Yes. For the next question: The difference is really on if you take the overall mix of these precious metals. Remember the EUR 250 million we first mentioned in April was based on the average prices of the first quarter. And as we now -- in our outlook, you've seen that change to the current prices assumed to be continued for the second half, and these are lower. So that's the impact you see. So the first half, obviously we have the effective prices and which are very similar if you take the mix to the average of the first quarter, while now for the second half, this price is -- specifically relate to volume indeed. The price for volume is lower. So that's the mix effect that you have in there.

Operator
Our next question comes from the line of Stijn Demeester from ING.

Stijn Demeester ***ING Groep N.V., Research Division - Research Analyst***
My question is on E&ST. In the press release, you stated Europe has surpassed China in terms of NMC demand. If I'm right, Europe still sells way less full EVs than China, about 500,000 versus close to 1 million in China in the first half, so what explains this lower NMC intensity in China? And how do you see this trend evolves? And perhaps related, what is your view on the recent chemistry mix announcement by some major Western OEMs? These are my questions. And good luck, Marc, with your future endeavors.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Thank you, Stijn. So the markets are really very different in China and Europe, so difficult to compare. The best-selling models in China, by far, are low-cost low-range vehicles. And by low range, I mean vehicles with a -- full electric vehicles with batteries of some 10 kilowatt hours -- 10, 12 or 15 kilowatt hours, while in Europe the full EVs that are being sold typically have batteries well in excess of 40 or 50 kilowatt hours. And so the SUVs which are selling well in Europe has -- and the compact SUVs and the other SUVs which are selling well in Europe typically have batteries ranging from 60 to 85 kilowatt hours. So it's a completely different mix of vehicles and battery sizes that you'll see in both market, which explains that with a lower vehicle number you have a much higher battery demand expressed in gigawatt hours in Europe than in China.

Secondly, because of the range requirements and the model lineups that you have in the different regions, China is more prone to LFP adoption, while Europe is not. And this explains also the difference in the pace of growth of the NMC market in the 2 regions. So that's, I would say, in a nutshell what explains the -- that evolution.

Stijn Demeester ***ING Groep N.V., Research Division - Research Analyst***
And maybe to follow up. Do -- I mean, do you see a risk that this LFP trend does spread to Europe given some announcement made in recent months?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Yes, I'm not so much concerned by announcements that the -- I look at the -- what's in the pipeline and what's in the qualification programs, what is in the -- on the technology road maps of our customers. And in a way, I think that the LFP is being used as some sort of a way to express that carmakers need a lower-cost solution for certain, I will say, segments of the market. And I think that it remains to be seen what kind of chemistry, what kind of technology will be utilized to fulfill these affordability requirements in order to be able to combine them with the required range or the desired range requirements of the European customers or consumers. So I'm not concerned because, if I look at the NMC growth prospects globally and in Europe and in North America and elsewhere, alone, I mean, the growth is so gigantic, anyways, in the next 10 years that it will be hard to fulfill in terms of supply chain ramp-up in any case.

Stijn Demeester ***ING Groep N.V., Research Division - Research Analyst***

Understood. And do you think it's also used as a way to suppress pricing in, for example, NMC?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

No, because the cost models are completely different. And I would like also to remind you that current pricing for LFP is totally unsustainable because Chinese is -- it's only produced in China out of spare capacity and sold, in many instances, below costs, so this is totally unsustainable. And if new investments were to be made, especially outside of China, you would arrive at a completely different cost picture for that technology. Plus, one has to bear in mind that at a certain point in time consumers and car OEMs will also have to incorporate the costs of recycling of end-of-life batteries in the full picture. And the costs of recycling LFP batteries will be much higher than the costs of recycling NMC-based batteries because, in a way, the content -- then metal content of NMC batteries is very close to paying for the recycling, while for LFP batteries there is a -- significant supplements to be paid in order to have these batteries recycled because the values of the raw materials is insignificant.

Operator

The next question comes from the line of Wim Hoste from KBC Securities.

Wim Hoste ***KBC Securities NV, Research Division - Executive Director Research***

I just want to follow up on the discussion NMC and China. Can you maybe elaborate a little bit on the pricing conditions for NMC? Is the market growth that you -- that we start to see also in China, be it a bit skewed towards LFP -- but is the market growth already leading to signs of improvement of pricing conditions in China or not? And can you maybe, yes, give a bit of your view on how long the pricing pressure might then take? Any thoughts on that?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Wim, I wish I could have given you a positive answer on the price development in China. Unfortunately, I can't. And I have to stick to what I said a few months ago and a year ago, that the current -- that market currently remains in overcapacity. And this is not conducive to positive price developments, and I don't see that changing in the next 12 to 18 months or 12 to 24 months. It remains to be seen at which pace the overcapacity will be absorbed, but as I mentioned, the market dynamics from a battery sizing or from a chemistry point of view are different in China than in other regions. So for the short term, I'm not very positive about prospects of price improvements. I don't see them now and I would not bank on that in the short term.

Wim Hoste ***KBC Securities NV, Research Division - Executive Director Research***
Okay, clear.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
And sorry -- no deterioration either. So it's -- that's not the point. It's just [stability] compared to what I said a year ago or 6 months ago or 3 months ago.

Operator
Our next question comes from the line of Georgina Iwamoto from Goldman Sachs.

Georgina Iwamoto ***Goldman Sachs Group, Inc., Research Division - Associate***
I've got 2. The first one is on auto production. I think the supply-side and semiconductor shortages are fairly well understood, but I was wondering if you could give a sense of how you think demand levels are and if you think that the production shortages this year should be seen as [phasing] additional volume growth for Umicore into next year. And then the second question is on Catalysis: So just wondering if you could remind us of any incremental regulatory drivers heading into 2022. And if you think about the moving parts for next year, would you see increased content and higher car production as more important? Or the potential for lower PGM prices is the bigger swing factor.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Georgina, let me start with the second part of your question, in Catalysis. There is no major step in emission regulations coming up next year. Actually the bigger -- the biggest step that -- in the short term is the one taking place, as we speak, in China with the nationwide adoption of China 6 norms for heavy duty. And in a way, this had a positive impact on us in the first part of this year because we saw massive orders for China 5 catalyst technologies and China 5 trucks before we move up to China 6. So there will probably be a sort of [intermedial] of several months before we see China 6 demand picking up more significantly. And this should continue throughout. I mean the ramp-up of China 6 will continue throughout 2022 once this intermedial is over. And that's the major regulatory change in the short term. In the medium term, the discussions, as you might know, regarding Euro 7 and [China 7] are still open. And it's difficult to make out today exactly what the content will be of Euro 7 and when it will be introduced.

Clearly the trends is that the tolerance of pollution is decreasing and the need to address the late -- the last micrograms or nanograms of pollution as well as the secondary emissions is there and should be addressed through the next wave of regulations, but again, exactly when and how this will take place is difficult to make out. Now if the industry projections for next year are more or less reliable and do materialize, the volume impact will be there for us in the light duty segment. And I mean I've seen some studies and some projections showing that volumes -- car production volumes could recover to the 2019 levels or to the pre-COVID-19 levels. So if that materializes, really the volume effect will be for us sharper than the effect of the new legislation.

And then PGM prices, again, through result, we'll see. I just would like to remind you that we have some hedges in place already for 2022 and to a certain extent for 2023, so that will also help provide some predictability in the figures. On the chip -- I mean going back to your first question, on the chip shortage: I mean this is really difficult to make out today. And I mean the visibility is -- actually the picture is really complicated, as I'm trying to understand it. I wouldn't dare to say, "As I understand it," because it's not only a matter of overall production volumes of these semiconductor chips. It's also a matter of mix effects and because the chips cannot be easily moved from one platform to the other [in function] of what the customers are ordering and in function of all the vehicles have been certified already. And we also have very limited visibility on the how many vehicles have been pre-produced to be chip ready, in a way, and how that could have -- impact the fresh production of cars once the chips -- or the chip supply will start to normalize. So it's very difficult to make out where things will be going. We are assuming that the chip shortage will persist for a while and we'll see how things unfold.

Georgina Iwamoto ***Goldman Sachs Group, Inc., Research Division - Associate***
Wish you best of luck.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
[Thank you].

Operator
Our next question comes from the line of Alex Stewart from Barclays.

James Alexander Stewart ***Barclays Bank PLC, Research Division - Chemicals Analyst***
I've actually got 2. Hopefully, that's okay. Could you confirm whether your net working capital position in Recycling is positive or negative? In other words, do the payables exceed inventories and debtors will go the other way around? It would be very helpful. Or perhaps it's neutral.

And then secondly, I think, at the end of last year, you talked about EUR 50 million higher costs in E&ST, you reiterated that today, for this year. And I believe that about half of that, so EUR 25 million, was related to higher D&A in Korea and China, but your D&A charge in the first half in E&ST was only up EUR 3 million or EUR 4 million or so, EUR 3 million year-on-year, so am I right in thinking the D&A would be up EUR 25 million? And does that mean that we're going to exceed the whole impact in the second half? If you could reconcile those comments, it would be very helpful.

Filip Platteeuw ***Umicore SA - CFO & Member of Management Board***
So first of all, on the working capital in Recycling. We'll refrain from giving you an absolute number, but

you know that this is by definition a low-working-capital business. One of the attractiveness of Recycling is that it's low in capital employed and specifically in working capital. So that's a given. We've indicated that for this first half of the year we've seen a reduction in working capital, so that means that it's in a way even lower than it was last year, again with the caveat of what I mentioned, the kind of one-off cutoff effects in June where a big part of that was actually in Recycling. So that's not really to be extrapolated from. So it's definitely, and you clearly see that also in the return on capital employed of the segment, working capital is indeed very low, but allow me to refrain from giving an absolute number.

In terms of the EUR 50 million of cost increase and specifically the question on D&A. Your question was on D&A. So the D&A indeed in E&ST only went up slightly. There's a couple of factors in there. First of all, you know that in Cobalt & Specialty Materials we have this footprint adjustment, this restructuring. So that has, I would say, some impact on D&A. More importantly on RBM, typically we start the D&A when the lines are utilized, so you should see somewhat of an acceleration in the second half in terms of the D&A charges going up. And that will definitely continue into next year, as we will ramp up the Nysa plant.

James Alexander Stewart ***Barclays Bank PLC, Research Division - Chemicals Analyst***
Sorry. If I can just elaborate on that because I was under the impression that actually the EUR 25 million higher D&A this year within the EUR 50 million guidance was D&A for the Korea and the China plants rather than the European plant. Was I wrong in that assumption?

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Yes. The majority is meant to come from the start-up of the Poland plant indeed in the second half of the year. And the other factors of cost increase are also to a large extent related to the start-up, the commissioning and the qualification costs of the new lines in Europe. So it's more H2 loaded than H1 indeed. And what is, in a way, distributed in a more evenly manner across semesters is the step-up in R&D efforts in the business group. So these costs -- that cost increase is already there.

James Alexander Stewart ***Barclays Bank PLC, Research Division - Chemicals Analyst***
That's really helpful. If I could just sneak in one last, very short question. You've explicitly called out the EUR 25 million FX impact in E&ST in the first half and said that that's material, which is why you're calling it out, but it's really only 4% on revenue. And Umicore, to the best of my knowledge, has never split out the currency impact on any of its divisions in any period, so why is it that you felt the need to explicitly mention 4% currency headwinds in the first half of this year in E&ST? I'd be interested to -- in your thoughts on that just contextually.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
I mean there wasn't a compelling need to do that, but I thought, we thought that it was useful to mention because, in a way, it's starting to pile up because the currency trend has been against us for a few years now, looking at the evolution of some Asian currencies and non-Asian currencies as well against the euro. And we thought we should have done that when it started to turn against us, but never

too late. And because it's starting to accumulate, we thought it was meaningful and material enough to mention. Do we have other questions, Barbara?

Operator
Speakers, I think your line got disconnected. I'm reconnecting you back on.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Okay, thank you, Barbara.

Operator
And you're back on.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Okay. So sorry. We had a technical hiccup, apparently. So do we have -- what are the following questions, Barbara?

Operator
So you were answering Mr. Alex Stewart.

James Alexander Stewart ***Barclays Bank PLC, Research Division - Chemicals Analyst***
Yes. I get the answers -- I got the answer I need. Thank you.

Operator
Okay, now we're going to the next question, and it comes from the line of Jaideep Pandya from On Field.

Jaideep Mukesh Pandya ***On Field Investment Research LLP - Analyst***
It's Jaideep actually. Marc, just a question really on the anode side. Conceptually if we don't progress on silicon anodes -- or rather let me ask it differently. If we progress on silicon anodes, do you think the market would then, on the cathode side, shift really to high-nickel cathodes? So basically what I'm asking is the -- is the anode today, the graphite anode today, sort of a bottleneck for increase in adoption for the high-nickel cathodes? And in a world where we switch to silicon anodes, what do you see LFP's future as a technology? That's my first question.

And then secondly, just around market share, it's obviously very difficult to reconcile numbers, but it seems at least from the outside-in that some of your Korean peers are growing way faster than you are. Are you actually confident and comfortable that you haven't really lost any share? Or is there a case where some of your platforms are not growing as strongly as others'? And wish you very good luck. I hope you don't pass all your tips on disclosure to the new CEO, but joking aside, thanks a lot for everything.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Yes, sorry to disappoint you. This was part of my first -- of the first induction session of Mathias was indeed all the tips about not disclosing what we don't want to disclose, so I'm sorry. I should have -- we should have talked beforehand.

So let's turn to your questions on the silicon anode side. So actually the adoption of high-nickel technologies is moving ahead, in a way, without waiting for the adoption of silicon composite anodes, at least in the first wave. We are indeed getting closer to where the anode is a bottleneck. And this can still be managed by the battery cell makers, as I understand it, through their battery designs. And this being said, we see some confirmation that novel anode materials will be required and are in the technology road maps of the battery makers in order to continue to increase capacity to remove that potential bottleneck as we move to higher densities on the cathode side indeed. So I'm pretty positive about the prospects for new anodes. And the -- and [all] programs are also moving ahead. As you know from previous discussions, we have products in our portfolio which we are sampling to a number of customers and also being sampled. As I explained a while ago, the introduction of these new technologies typically goes first through nonautomotive applications. And that is a stage which has been passed, and today we are reaching out increasingly so and more systematically to automotive-related customers -- or to customers related for automotive applications, sorry.

And yes, on the LFP side, I don't have, I would say, a precise picture of how the anode-cathode interaction works. And this is not standing in the way of what we are doing at Umicore in any case.

And the market share. Sorry. On the market share side, our market shares are, yes, give or take, a few basis points. They are relatively stable, but you have mix effects from 1 semester to the other or from 1 year to the other, depending on how well your models are selling or not. And so this may influence the growth in -- over a certain period of time and the -- in relative terms to others, but over time, my experience is that these effects tend to even out. And especially, as our portfolio of platforms continues to get more diversified in the future, these effects should be less visible, in a way.

Operator
And our next questions comes from the line of Ranulf Orr from Redburn.

Ranulf Orr ***Redburn (Europe) Limited, Research Division - Research Analyst***
Probably I'd just first like to second those sentiments around disclosure as well, but my question really is on the contribution to Recycling from PMM. I understand the sort of super normal earnings there aren't sort of captured in the EUR 250 million PGM benefit, so I was kind of -- I was wondering if you could give us an idea of sort of what the overrunning in that part of the businesses is as well at the moment.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Yes, Ranulf, yes, firstly, I can confirm that the contribution from PMM is not included or is not reflected in the EUR 250 million indeed. And we prefer not to be explicit about the figure. It is indeed unusually high.

Ranulf Orr ***Redburn (Europe) Limited, Research Division - Research Analyst***

Okay. And would you expect the second half in that part of the business to be similar to the first...

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

No, actually not, because if I look at the current trends, the volatility is somewhat less than -- or much less than it was in the first part of the year, much less than at the time we saw the spike in precious metal prices. So I don't expect the same trading contributor -- same contribution from trading activities in the second part of the year. It will be much more normalized, I would expect, but difficult to make out obviously because -- and for the sake of making forecasts and projections, we have to make certain metal price assumptions. And in our model, the metal prices are assumed to be flat, which is not very conducive to volatility. And so the -- based on what I see today, I expect a much lower contribution indeed.

Ranulf Orr ***Redburn (Europe) Limited, Research Division - Research Analyst***

Great. And best of luck for the future.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

Thank you.

Operator

At this stage, we'll take one last question, and it comes from the line of Geoff Haire from UBS.

Geoffrey Robert Haire ***UBS Investment Bank, Research Division - MD and Equity Research Analyst***

I just wondered what you made of CATL's announcement yesterday of moving into sodium ion batteries by 2023.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***

The same as I made from most announcements -- I'm not too much moved by announcements. I'm moved by facts and driven by the facts and market realities. This being said: Sodium ion is on our technology road map, has been for a while; and is what we call a horizon 3 material, so very long term, so beyond 10 years. And then it's -- in theory, it's a chemistry that could have some attraction for power applications because the power density is meant to be pretty good. However, the energy density is intrinsically low and much lower than for lithium ion and even much lower than lithium iron phosphate. So even with the improvements that CATL has alluded to, which are still I think fairly hypothetical and were not detailed, I don't think that this is a material that will compete for range applications for the automotive segment -- anytime soon or even at all. That could be interesting to see, if they make the declared improvements, it could be interesting to see how that would cannibalize the chemistry, but I see no way for sodium ion to compete with those applications which require range because energy density intrinsically is poor. And this has to a certain extent to do with the low voltage at which this chemistry can work.

Operator
Sir, at this stage, I hand back to you.

Marc Grynberg ***Umicore SA - CEO & Member of Management Board***
Thank you Barbara.

And at this stage, I would like to thank you once again for not only attending the call this morning but more generally for following Umicore for so many years; and for the long-standing support or interest in the company, as I mentioned a while ago. And it's been, as I mentioned, a real privilege for me to interact with you for so many years. Actually I mentioned initially since 2008, but some of you, some of the veterans in the room will recall that I was the CFO between 2000 and 2006. And so my earnings calls go back to 2000. So it's been 20-plus years of interactions, which have been extremely rewarding to me. And at this stage, I would like to wish you all very well.

Keep well, and bye-bye.

Operator
Ladies and gentlemen, thank you for your participation today. This concludes today's conference. You may now disconnect your lines. Thank you.