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EDITED TRANSCRIPT

JMAT.L - Full Year 2018 Johnson Matthey PLC Earnings Presentation

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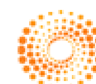

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CORPORATE PARTICIPANTS

Alan E. Nelson *Johnson Matthey Plc - Sector Chief Executive New Markets and Group Chief Technology Officer*

Anna Manz *Johnson Matthey Plc - Chief Financial Officer & Executive Director*

Jane E. Toogood *Johnson Matthey Plc - Sector Chief Executive Efficient Natural Resources*

John F. Walker *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Robert J. MacLeod *Johnson Matthey Plc - Chief Executive & Executive Director*

CONFERENCE CALL PARTICIPANTS

Adam Robert Collins *Liberum Capital Limited, Research Division - Analyst*

Andrew Gregory Stott *UBS Investment Bank, Research Division - MD and Research Analyst*

Charles Greig *Citigroup Inc, Research Division - Graduate Associate*

Charles L. Webb *Morgan Stanley, Research Division - Equity Analyst*

Chetan Udeshi *JP Morgan Chase & Co, Research Division - Research Analyst*

Jean-Baptiste Henri Rolland *BofA Merrill Lynch, Research Division - Associate*

Martin John Evans *HSBC, Research Division - Analyst of Global Chemicals*

Sebastian Christian August Bray *Berenberg, Research Division - Analyst*

PRESENTATION

Robert J. MacLeod *- Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, if everybody is ready, we'll get started. So good morning, everybody, and welcome to Johnson Matthey's full year result presentation.

Good. We had a good year this year, delivering what we promised a year ago for both sales and operating profit. Our return on invested capital was down slightly, which we will cover in a bit more detail shortly. We increased the final dividend by 7%, reflecting our confidence in the prospects of the group for the medium and long term. And we've also made significant progress in executing our strategy. And I'll come in -- on to this shortly, but just very brief word from me now but then I'll hand over to Anna to go through the financials in more detail.

Anna?

Anna Manz *- Johnson Matthey Plc - Chief Financial Officer & Executive Director*

Thank you, Robert. Good morning, everyone.

We had a good year. We delivered results in line with our expectations at the start of the year. Sales were up 8% and underlying operating profit was up 2%, with a slight translational FX benefit. At constant rates, sales were up 7%. Underlying operating profit at constant rates was flat, impacted by the comparison against last year's post-retirement medical benefit credit. Excluding this, underlying operating profit was up 4%. Underlying EPS was flat, as translational FX benefits were offset by higher net finance charges and higher underlying tax rate.

Sales grew 7%, which was slightly ahead of our full year guidance of 6% and an acceleration in the second half. It was led by strong growth in Clean Air, supported by continued growth in Efficient Natural Resources and Health. And for the group as a whole, I expect this strong momentum to continue into the next year.

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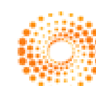

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Now turning to operating profit. Operating profit was in line with guidance, flat at constant rates. We also benefited by GBP 9 million from translational FX. As I've said to you already, we lapped a GBP 17 million credit on our U.S. post-retirement medical benefit plan, and throughout this presentation I will refer to our performance excluding it. During the year, we've taken action to improve the quality and efficiency of our business, which has delivered cost savings but has also in some cases come with some additional costs in the short term. I'll go into these in more detail as I go through the sectors, but for example, in Efficient Natural Resources we've delivered cost savings through restructuring to simplify our organization whilst incurring costs through improving our inventory management and destocking, while in Health we started to optimize our manufacturing footprint. Also, costs in relation to group initiatives have increased, some of which are part of corporate costs while others are within the sectors. We continued to invest in group efficiency initiatives, such as our global procurement program, and in addition had increased legal costs. So while these actions impacted profit this year, they are creating the platform for us to deliver the strategy that we laid out at our Capital Markets Day last year.

Clean Air performed strongly, delivering sales growth of 9%, outperforming global vehicle production in both light and heavy duty in a year with minimal benefits from legislation. I'm pleased with the performance of our European Light Duty business, which was flat for the full year. Here we saw a growth of 3% in the second half, having been down 3% in the first half. Growth in gasoline was ahead of our expectations, up 23%, with increasing sales to customers with large and more complex platforms. It was offset by a 4% decline in diesel sales. The diesel market was flat year-on-year. And our sales declined due to lower pass-through substrate costs, which we talked about at the half year. We did not see the half 2 growth we expected in diesel, as one customer slightly delayed a platform launch from December to March, but we do remain on track to reach our 65% share of European light-duty vehicles by March 2019. Our light duty business in both Asia and the Americas outperformed their respective markets.

In heavy duty we saw a continuation of the trends from the first half with continued double-digit growth, and we outperformed the truck production in every region. The recovery in the U.S. Class 8 trucks came through in the year, with Class 8 truck production up 30%. And whilst we expect continued growth in 2018, '19, it will moderate significantly. Our Chinese business continued to grow strongly from a low base, supported by strong growth in the Asian truck market, the Chinese truck market, as it continues to adjust to the enforcement of the truck loading weight limits, though growth was lower in the second half. Our European heavy duty business also outperformed the 5% growth in the market, helped by the continued ramp-up of our business wins.

Margin in Clean Air was maintained, and operating profit grew in line with sales.

Turning to the outlook. Sales growth in 2018, '19 will continue to be strong, led by the share gains in the European Light Duty diesel, which will ramp up throughout the year. We have previously expected that the margin could be negatively impacted by up to 1 percentage point due to that quick ramp-up of these share gains. However, due to the ongoing efficiency initiatives, including procurement, margin is now expected to be broadly stable.

Efficient Natural Resources. Sales here were up 4%, with good growth across the majority of the business.

As expected within Catalyst Technologies, our licensing business was significantly down. Demand here is driven by new plant builds, and that has been subdued. Licensing income has now reached the bottom. And while there are early signs of improved activity in some markets in which we operate, we don't forecast a recovery in licensing income in the near term. Sales of refill catalysts and additives into existing plants were strong, and we outperformed our markets in aggregate. Pgm Services was also strong, benefiting from higher precious metal prices.

Operating profit was down 2%, and margin was down 0.7 percentage points. As guided, the decline in high-margin licensing business did impact our profitability. We also had various additional costs in the year associated with improving the efficiency of our business, principally in relation to destocking as we better manage our inventory. These more than offset the benefit of higher precious metal prices, transactional FX as well as the expected cost savings associated with the delayering across our business. Significant action has been taken this year to improve the quality of our business, simplifying our organization and our investment and aligning it behind the customers and products which will deliver both higher growth for the future and improved margins.

In 2018, '19, we expect slight sales growth. And operating profit will grow ahead of this. In addition, we will see a full year of cost savings in relation to the restructuring programme.

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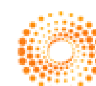

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Sales in Health were up 6%, with most of the key trends from the first half continuing through the second half. In Generics sales were flat. Sales of controlled APIs were down as expected, driven by APIs for ADHD treatments. However, sales of non controlled APIs grew strongly as we continued to benefit from the increased contribution of dofetilide. The Innovator business also grew strongly, with improvements in both pricing and volume.

Operating profit was down 9%, and margin declined 2.9 percentage points. Whilst sales of APIs increased margin, we saw a manufacturing cost increase in the period. These costs were driven by the optimization of our manufacturing footprint as we build a more efficient platform to support breakthrough growth. They included starting to commission a new Annan plant and preparations for the closure of our Riverside plant in the U.S. This optimization had associated costs in the short term but will deliver a significant saving once Annan is fully operational in 2020, 2021.

For '18, '19, as we guided previously, we're expecting operating profit to be down. Several API products with higher profitability move into decline in '18, '19, while launches of new API products only have a small contribution in the year. We will see a small net benefit in relation to our footprint optimization. We expect performance to be weighted to the second half given the life cycle of current portfolio and existing APIs and the visibility we have on those customer launches.

Looking at New Markets. LFP battery materials sales continued to be lower, impacting New Markets overall. This was principally due to changes in electric vehicle tax incentives in China which has led to the increased substitution of LFP with high-energy materials. We continued to make really good progress in the development of our next-generation ultra high density battery material eLNO, and Robert will talk more about this later. Other parts of the business performed well, with sales from fuel cells growing more than 50% in the year and Medical Device Components growing 8%.

Operating profit grew 60%, as we lapped a GBP 5 million impairment charge last year. Excluding this, operating profit was broadly flat despite increased investment in eLNO. Looking to '18, '19, New Markets will deliver sales and operating profit growth.

Moving down the income statement.

As flagged, finance charges increased in the second half, with higher costs to fund metal across the group. This was led by higher metal prices and reduced liquidity in the palladium market which resulted in higher lease rates. Finance charges are also expected to be slightly higher again next year. Although metal funding costs will reduce, this will be offset by higher interest rates.

The underlying tax rate increased from 17% to 17.7%, as we had guided. And for '18, '19, the tax rate will reduce to around 16% following the lowering of the U.S. corporate tax rate.

Underlying EPS was broadly flat, as the benefit of translational FX was offset by higher finance and tax charges. The board is recommending a final dividend of 58.25p. This brings the total dividend per share to 80p for the year, a 7% increase. This reflects our confidence in the strong future prospects for the group.

Our reported results were impacted by some one-off items. We've made great progress as we drive efficiency in the business and optimize our manufacturing footprint. We incurred GBP 90 million of impairment and restructuring charges, of which GBP 43 million related to the programme which I announced to you this time last year. Additionally, as I mentioned, we're closing our Riverside plant, which had a GBP 36 million charge associated with it. Cash costs associated with this impairment and restructuring were GBP 13 million in the year, and there'll be a further GBP 10 million in '18, '19. We also had a legal settlement during the course of the year, of which around 2/3 was cash, paid during the year; and made a small loss on disposal of our automotive battery systems business.

Free cash flow was GBP 136 million compared to GBP 230 million last year, with the reduction reflecting higher working capital, which I'll explain to you in more detail on the next slide. Our focus on working capital this year has led to an improvement in our working capital days, excluding precious metal, from 54 days last year to 50 days this year. Sales grew strongly in the year. And although precious metal working -- non-precious metal working capital was an outflow, disciplined working capital management constrained the increase, but what is really important is the ongoing levels of working capital in the business throughout the year. Here we've also seen a significant improvement in the average working capital days by 7 days to 62.

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Whilst managing precious metals across the group is a core competence and a key competitive advantage, movements in metal working capital can be volatile, as they are a function of our customers' choices rather than our own. Precious metal working capital was higher throughout the year given the higher metal prices and reduced liquidity in the market. In this environment we held greater safety stock, and our customers stored less metal with us. And we saw an increase in refinery backlogs as customers sought to refine more scrap. We've made improvements in our metal working capital cycle, although this was not sufficient to offset the external pressures we faced. Overall, our focus here has enabled us to restrict growth in total working capital to below that of sales growth despite the movement in metal. We will continue to drive underlying improvement in working capital throughout the year.

We continue our disciplined investment to support future growth, with CapEx of GBP 217 million in the year. This was below our previous guidance for 2 reasons: firstly, lower-than-expected spend on our Clean Air plant in Poland due to permitting delays; and secondly, more rigorous capital allocation across the group. For '18, '19, I continue to expect a significant increase in CapEx up to GBP 390 million as we increase our CapEx on growth projects. In Clean Air we will invest in Poland and China. We will continue to invest in the Health pipeline and on our eLNO demonstration and commercial plants. Spend on improving business systems continues, with the first go-live of SAP scheduled for later this summer. This, of course, will be the trigger for us to start depreciating our investment. And overall we expect the group depreciation charge to increase next year by around GBP 7 million. Rigorous resource allocation and, within that, CapEx spend remains a key focus for me. Whilst CapEx-to-depreciation will be higher than 2x in '18, '19, this will average out to around 1.8x over the medium term.

Moving to the balance sheet.

Net debt has [decreased] (corrected by company after the call) GBP 37 million since the prior year-end, a GBP 212 million decrease since the half year. Our balance sheet remained strong, with net debt-to-EBITDA at 1.1x. We target net debt-to-EBITDA of 1.5 to 2x, allowing us to invest in value-enhancing opportunities which accelerate our growth and meet our criteria. Whilst rigorous -- while currently below our target range, it ensures that we have the flexibility to invest further for the future growth, as I outlined earlier.

Our return on invested capital declined to 16.4%. The higher U.K. pension asset and precious metal working capital were the key drivers. As I've already talked about, precious metal working capital has been volatile and was higher on average throughout the year. Excluding the movement on the U.K. pension asset, return on invested capital would have declined to 17.1%. Also as I've mentioned, we're continuing to invest for the future both in terms of capital expenditure and additional costs relating to improving the quality of our business. The investments we are making drive growth in the future, and so we will see our return on invested capital improve as these investments bear fruit.

I outlined 3 focus areas when I started: rigorous resource allocation, disciplined management of working capital and increasing the efficiency of our business. These remain key and will support our ambition for sustained improvements in our return on invested capital. I'm really pleased with the significant progress across these areas in the year.

Our focus on rigorous and transparent resource allocation will drive ROIC to 20% over the medium term. For example, we've accelerated R&D spend in areas of high potential such as eLNO. And we've taken a rigorous approach to stopping spend in areas where we're either failing to hit milestones or where the opportunity is not meeting our criteria. Disciplined management of working capital, as I talked to you about earlier, we've made significant improvements in this area, and I'm really pleased with our progress. Increasing business-wide efficiency is something that is delivering results across a number of the sectors already. And there's more to come over the medium term as we start to see the benefits of the manufacturing optimization, the procurement programme and the implementation of SAP. These will help us maintain our margins in Clean Air next year. The margin in Efficient Natural Resources will improve. And Health margin expansion will take a little longer but will benefit from the actions that we've taken on our manufacturing footprint.

On SAP we're moving from over 40 ledger systems to one global system. We won't see the benefits of this for a few years, as SAP rolls out gradually. However, we are incurring the costs now, but this is all part of investing for future growth. Specifically on procurement, we've identified new opportunities. This has increased our expected savings to around GBP 60 million, of which roughly 3/4 will directly benefit the P&L over the next 3 years. We're progressing ahead of schedule, having already secured our first GBP 13 million of savings to benefit '18, '19. We will be reinvesting some of these benefits in the early years as we catch up on a period of underinvestment in parts of the group. Over the longer term, this gives us a huge opportunity to create efficiency, but we have to get the platform right first.

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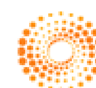

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So moving to the overall outlook for the next year.

For '18, '19, we expect to deliver mid- to high single-digit growth at constant rates. This will be led by Clean Air, which will continue to be strong as diesel share comes through in Light Duty Europe. We will deliver this group performance despite an increase in costs associated with group efficiency programmes, some of which sit in corporate costs and some of which are within the sectors. We will see a stronger second half with our normal seasonality; as well as Health being weighted to the second half, as I mentioned. Currently, we expect a GBP 6 million adverse impact on underlying operating profit from foreign exchange translation. I will continue to focus on working capital, targeting a further reduction in average working capital days. And as mentioned, CapEx will be up to GBP 390 million.

I'm looking forward to another exciting year as we continue to deliver on the strategy that we set out at the Capital Markets Day. And I'll now hand back to Robert to take you through this in more detail.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Thank you, Anna.

Now to give you some further detail on how we're progressing on our strategy.

This slide sums up what JM is all about. We're a world-class technology company, and our core is our chemistry. Our world-class chemists use their expertise to solve complex problems for our customers. Our skills in chemistry and our ability to scale it up to solve problems is our main competitive advantage enabling us to build close, collaborative relationships with current and future customers. We focus on high-margin, technology-driven growth markets; and in those markets where the combination of our chemistry and customer focus gives us leadership. We invest heavily in R&D and extend those leadership positions, which in turn keeps us close to our customers. All of this is underpinned by a relentless focus on operational efficiency. We deliver our strategy through our 4 sectors, where we have clear visibility for sustained growth in Clean Air where share gains in Europe and tighter legislation across the world will provide good growth while we navigate the changing powertrain landscape. Focused investment and an improved business will allow our Efficient Natural Resource sector to grow ahead of its markets, and our focus on efficiency will enable profit to grow ahead of sales. We are positioning ourselves for breakout growth in Health, taking action in the year to build the platform that will deliver the growth in our pipeline and around an additional GBP 100 million of operating profit by 2025. And we are progressing well with our exciting plans to deliver breakout growth in Battery Materials through our next-generation eLNO materials. I'll go into this in more detail shortly.

Of course, all of this growth is supported through our focus on efficiency across the group, where Anna already talked you through some of the great progress we're making there, so now I'll move on to our progress by sector. And what we are showing here is how we are progressing against the milestones we set out last year. Not all are green, but on the whole we are making huge strides in improving the company to deliver what we promised.

In Clean Air we deliver our strategy through our global leadership, working closely with our customers to meet tightening legislation. For example, our agility and technical leadership enabled us to move quickly to serve our customers at a key point in time when the market was going through a lot of change. This technical leadership and agility was a key driver for the share gains we have made in Europe and continues to be one of our key differentiators. And of course, we have to have a highly efficient manufacturing footprint behind this. Some specific milestones are laid out here on the slide, and you can see that we are progressing well. As we've outlined, our growth in Light Duty Europe will be driven by a combination of share gains and increasing value per catalyst over the next few years.

Firstly, on the share gains in European Light Duty diesel, we expect to gain around 20 percentage points of share over the next year, to reach around 65% share by the end of '18, '19. It's worth talking here to the share of diesel for the market as a whole in Europe. Our strategy for Clean Air, as set out on our Capital Markets Day, assumes a decline in Western European light-duty diesel sales to 25% in 2025, but looking at cars alone, that equates to 20% in 2025. In the last year, diesel sales of new cars in Western Europe declined from 49% to 42%. And in April, the first month of our new year, diesel sales were just 37%. The current period of volatility has required the OEMs to rapidly adjust their platform mix, but it's important to note that these recent trends are consistent with our assumptions on diesel share. And you will have seen that we're also doing well in gasoline. We still expect to gain around 5 percentage points in gasoline as the adoption of Euro 6c ramps up. The business we've won gives us confidence that we

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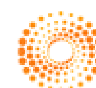

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will deliver these gains, though they come through over time by '20, '21. In China we are continuing to help customers meet the upcoming China 6 legislation, which is anticipated to come in from '20, '21, for both cars and trucks. We expect to maintain our share in light duty as China 6 comes in, and we're on track with the businesses -- business we have won to date. There may be some opportunity for us to grow share in the heavy duty segment, but at the moment we are planning a consistent share.

The final milestone shown here is to expand and enhance our capability and capacity to support this growth. We need a larger manufacturing footprint, and we're building-in more flexibility important for agility and also to support margins in the sector over the period. We've started our investment in Poland, and while there's been a small delay due to permitting, we're on track to see a production ramp-up in line with our business expansion. And we've approved the building of a plant in China to serve the mass expansion of our business from China 6. In addition to these, there are further value drivers, including good growth in heavy duty and significant growth in both light and the heavy segments in India.

So good progress for Clean Air reflecting the momentum for delivery we have in this business. All of this delivers mid single digit CAGR sales growth over the next 10 years while keeping margins broadly stable. On margins, I'm very pleased with the work that John and his team have done on efficiencies. Plus, procurement benefits will enable us to keep margins broadly stable next year, ahead of our original expectations.

In Efficient Natural Resources we deliver our strategy through our leadership positions in almost all of our sub-segments, our targeted investment by segment and region, focused R&D in areas of high returns and a continued focus on efficiency. You can see here 4 key milestones where we're making good progress, with more benefits to follow as the work Jane is doing continues to improve the business.

Firstly, sales growth ahead of our markets. Over the medium term, we expect to grow about 1 percentage point above our markets, excluding PGMS where we expect low single-digit growth. Next year, sales growth will be modest and thus slightly behind our longer-term plan but broadly in line with the growth in our markets. This partly reflects the impact of our focus on quality business, which hits the short term but delivers greater value in the medium and long term. In addition to sales growth, we will deliver operating profit growth ahead of sales. We are on track to deliver this, as the efficiencies we are driving in the business are helping us to expand our margin.

Jane and the team have completed a detailed review of our product portfolio this year. The actions from that review will be implemented over the next 2 years as we focus on the higher-quality parts of the business delivering improved value. And we continue to look at additional opportunities within this space, looking at new and adjacent areas that can benefit from our chemistry and technology. One example here is the work we've done on turning waste into aviation fuel. Early days, but this could be an interesting area for licensing catalyst income in future years. There are plenty of other examples, and we look forward to providing more updates in time.

So mainly green as we continue to improve the quality of our business. Some of the benefits from our actions take a while to come through. In fact, some incur additional costs in the short run, but we're setting out the platform for the medium and long term. So we're on track in Efficient Natural Resources to deliver the sales and operating growth we have promised.

In Health we deliver our strategy through driving value from our existing business, focusing on operating efficiencies and targeted high-value products; delivering growth from our new API product portfolio; and enhancing through ongoing R&D investment our position as a technology partner of choice to both innovator and generic customers alike.

We recently appointed Jason Apter to lead this sector and deliver the strategy. And Jason is here this morning to take any questions you may have and, of course, meet you all.

There are a number of milestones for us in Health, particularly in commercializing our pipeline. And we put on this slide the biggest 3 for the sector. Firstly, looking at our manufacturing footprint, we announced the closure of our Riverside plant. This is in line with our focus on complex, high-value, low-volume APIs rather than the bulk-quantity manufacturing Riverside is designed for. Furthermore, we continued to develop our site in Annan, and this will provide the efficient platform to deliver value for our existing global product portfolio. At the Capital Markets Day, we also talked about delivering growth from our existing business. this year, our sales of ADHD APIs in bulk opiates in Europe were lower, although sales of specialty opiates grew strongly. The third milestone is the continued development of our new product portfolio, which remains on track to deliver around GBP 100 million of additional operating profit by 2025, as I will show you on the next slide.

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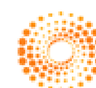

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This top chart is an update to the chart shown in our Capital Markets Day last September. As you can see, we're still on track to deliver around GBP 100 million of additional profit by '24, '25. This is based on the output of a detailed Monte Carlo model we continually run and is risk adjusted. Below this we are giving some additional detail on how the pipeline is progressing. Our API products move from development to market through key stages from the early stage to formulation development, to filing and obtaining regulatory approval, through to launch, all of which involves working closely with our customers. And so the timings are a function of our delivery, our customers' timings and the time it takes to get regulatory approval and launch, so what about our progress in the year? As you can see, no launches yet, but that was what we expected. Three have moved into the regulatory stage to bring this total to five. And these are all expected to be launched in the next 3 years. There is no movement in the formulation development stage, reflecting the three that have moved into the regulatory -- sorry, the four that have moved in -- sorry, three that have moved into the regulatory phase being replaced by those moving in from earlier stages. And a net reduction of two in the early stage is reflecting those products moving along the process, some things stopped and some new ones being added.

So on to Battery Materials and our progress in developing and commercializing our next-generation eLNO materials. I'll spend some time on this topic, as it's such an exciting opportunity for us. I will update you on our focus on the market for ultra high energy density materials that will help enable the mass adoption of pure-battery electric vehicles. And I'll provide some further evidence of the leading qualities of eLNO.

We are making good progress working with our customers, and feedback continues to be excellent. We are also progressing well with our scale-up plans. The board has approved the building of a 1,000-tonne demonstration plant in the U.K., and this is larger than we originally planned and should come onstream in late 2019. Our plans for our full-scale commercial plant are also on track. And we are working towards full board approval this summer, as we previously outlined. And of course, we're already thinking about capacity beyond our first plant, above 10,000 tonnes, though the detail on that will follow in -- more in time.

eLNO is the next-generation material. It is beyond what's in the market today and will help enable the mass adoption of pure-battery electric vehicles. Most materials today end up in the mild to plug-in hybrids. We want to help customers move to the next stage. The chart on the left illustrates how the market is moving to higher energy densities. The current landscape is dominated by NMC532, 622 and NCA. eLNO competes against materials not yet available in the markets, including NMC811 and advanced NCA. These form the ultra high energy density market. We've given on the right here some indication of the size of the market. By 2030, we expect the ultra high energy density market to be around 500,000 to 1.8 million tonnes per year, amounting to around 1/3 to 2/3 of the total cathode market. This is our focus. We're not seeking entry into today's market. We could easily produce a copycat product and move faster, but what -- we are doing what JM does best, maximizing the value of our chemistry. This should enable us to earn higher margins and returns.

eLNO offers a step change in energy density over current materials and lower cobalt content. I know many of you know -- many of you want more validation of its performance. And obviously we're limited in how much we can give you, for commercial reasons, so what we are showing you here today is the results of independent testing carried out for us by QinetiQ. This shows the performance of eLNO compared with the current materials in the market and the next-generation materials. eLNO's relative performance improves when we look at cycle life; and how it performs over time, a key metric used by our customers. So not only do we have the material with a highest energy density today, but eLNO's performance continues for longer and helps enable a lower total cost over the useful life. It is this overall performance that is attractive to our customers.

We have firm plans to commercialize eLNO. Having a leading material, we're able to be thoughtful about which customers we work with first. And we're working with large multinational automotive and cell OEMs that will play an active role in specifying cathode materials and who will benefit most from eLNO. As I've mentioned previously, the customers we are working with have been very positive by the characteristics of eLNO. So here's a summary of the route to market: We are currently in the validation cycle and making great progress. Customer feedback, as I said before, remains excellent. The next stage is moving to providing A samples typically up to 10 tonnes per platform, which we will start supplying in 2019. Then we progress up to B samples typically up to 200 tonnes per platform and involving more extensive testing; and then C samples, again with more material. This is the stage you bid for and win platforms. Now throughout the sampling process, we will see sales, as these are sizable quantities that we will be providing to customers and they are prepared to pay for that.

Supporting all of this is the scale-up of our manufacturing capability, including completing the expansion of our pilot plant this summer, and this will give us the capacity to make up to 10 metric tons per year; building our demonstration-scale plant, which will be in the U.K. and, as I've said, have 1,000 tonnes capacity, double the 500 tonnes that we originally intended, which should be completed by late 2019. We're also building our

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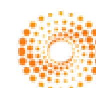

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first customer application center here in the U.K., and plans for our commercial plant are progressing well. We will build this plant in Europe in line with the development of the supply chain there.

So a very exciting area for JM and lots of good progress. The key point here is that we're moving as fast as we can. The time lines are partly a function of how fast our customers move. And building our first plant to a size of 10,000 tonnes is the quickest route to market for us. As I said, we're all of course thinking about our plans beyond the next -- the first 10,000 tonnes of capacity. And we'll be building our first plant with expansion plans in mind.

So to recap on eLNO. We are focused on the ultra high energy density market, a market that doesn't exist today but one that will be a key enabler of growth in the BEV market in the future. Customer testing and early validation is progressing well. Our demonstration-scale plant has been approved by the board and is on track. We are progressing the commercial plant, and formal approval is expected by the board this summer; and as I said, we're building that in Europe. And we are developing our plans beyond 10,000 tonnes.

So to conclude for the group.

I'm pleased with our performance in the last year. Overall, we had a good year progressing our strategy while delivering results in line with our expectations. We see a strong year ahead with mid- to high single-digit growth, further progress on operational efficiency and stepped-up capital investment to deliver growth. And we're on track to deliver in the medium term too: mid- to high single-digit EPS CAGR, expanding our return on invested capital to 20% and continuing our progressive dividend.

So thank you for your time this morning. I'll now invite join to -- John to join Anna and myself on stage. And we have Jane, Jason and Alan in the front row, all ready to take your questions.

QUESTIONS AND ANSWERS

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

So who would like to go first, [if anybody]? Andrew? Who's going to -- somebody him bring a mic, [Victoria]? Thank you.

Andrew Gregory Stott - *UBS Investment Bank, Research Division - MD and Research Analyst*

Andrew Stott, UBS. A couple questions, both on Health. The underlying performance of Health in the second half, I'm after. There was 2 impacts I'm aware of -- there was inventory write-down and then the impact of Annan rollout. So can you give me an idea of the underlying EBIT number if you strip out those 2 things? And then if I look at the chart, you repeated, in effect, on the pipeline. When you -- it's hard to scale to the naked eye, but it looks like about GBP 10 million for 2020 FY. Do we take that as a net number? Or are you still going to have contracts expiring on the original slate as we are this year?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, Anna, do -- the inventory write-down and Annan, do you want to give the color on that?

Anna Manz - *Johnson Matthey Plc - Chief Financial Officer & Executive Director*

Yes. So if you look over the full year in Health, we saw strong sales growth of 6%. If you exclude the manufacturing costs, we would have seen profit growth ahead of that because actually we saw some good pricing, but we had an inventory write-down and the costs in Annan, which is why you then see a profit decline. So operating profit growth would have been ahead of sales growth. I won't tell you exactly how much.

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Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay. And on the pipeline, you're right. It's -- I'm not trying to trick you by having the scale and making it difficult for you to see for the naked eye. There is some range in these things, so we can't be so precise. These numbers are net of the costs of taking the pipeline through to the conclusion, the sort of GBP 100 million that we will get to in 2025. There are, of course, as you know, some of the products that will -- the existing products will sort of decline a little bit, and so that is not factored into that chart. That chart is all about the sort of the non-launched products that we have today. They're in the pipeline. And the ones that are launched today, well, of course, they will fluctuate depending upon the performance of those products.

Andrew Gregory Stott - *UBS Investment Bank, Research Division - MD and Research Analyst*

Okay. And sorry, just to follow up, a separate question but a similar theme. The licensing income, can I just check on process cats, that is? Year-on-year, we're now flat. Is that what you're saying? So we stop going down when you think about '19 on '18...

Anna Manz - *Johnson Matthey Plc - Chief Financial Officer & Executive Director*

Yes, that's exactly right.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, thanks, Andrew. And see if we can pass over to Adam.

Adam Robert Collins - *Liberum Capital Limited, Research Division - Analyst*

It's Adam Collins from Liberum. I have 3 disparate questions. So first of all, could you explain why you've decided to locate the first commercial plant in Battery Materials in Europe rather than in Asia? Secondly, one for John perhaps, very exciting regulations emerging in China, China 6 for truck and car, which you say kicks in from 2020, '21. I'm just interested in your view, John, as to whether there's a chance this time of pre fitment to the extent that there is now ultra-low-sulfur fuel available and will -- this will be quite a hawkish policy bias in China around clean air. And then the third question, just a clarification on the Health area. In addition to saying that you expect GBP 100 million of incremental profits midterm from the pipeline, you also have talked about, from 2019, 2020, double-digit sales growth and the margins starting to tick up towards the high 20s. Could you just confirm that that's your expectation for the second fiscal year, double-digit sales growth in Health?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Thank you, Adam, for those questions. I think that, if I just take the first -- the last one, first: Yes. That's clear answer.

Adam Robert Collins - *Liberum Capital Limited, Research Division - Analyst*

Yes.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

The first one, why we're locating in Europe, well, that's where we see the development of the supply chain happening and where our customers are looking for product. We don't think that -- we can still export to other parts of the world if we need to, so -- but that's where we see the sort of major developments in the supply chain happening, so we're locating it there. And John, do you want to talk a little bit about...

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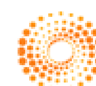

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John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Yes. And for China 6, we're obviously also very excited about the opportunity in both cars and trucks in China. And we're fielding inquiries right now, and it is very likely there will be some early adopters that'll go ahead of the legislation. That will probably be in '19, '20 fiscal year for us.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay?

Adam Robert Collins - *Liberum Capital Limited, Research Division - Analyst*

Great.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Thanks, Adam. [Victoria], if we can come to the front...

Chetan Udeshi - *JP Morgan Chase & Co, Research Division - Research Analyst*

Chetan Udeshi, JPMorgan. Maybe a few questions for John. How much of the share gains in diesel have you already seen in the last fiscal year? And given that most of this sort of will ramp through this year, will there be sort of a carryover impact into the following year, so '19, '20 fiscal year, as well in terms of strong growth? And Robert, I think, at CMD last year, you said you expect double-digit growth in the Clean Air business. Is that something you -- which you continue to expect as well based on current trends for this year?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

John, do you want to answer the first question?

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Yes. So the proportion of the 20% gain that we had in '17, '18 was not very much, so the majority of that gain is going to come through this year. There will be some -- well, I wouldn't call it carryover. There will be a continuation of that through the next fiscal year, and yes, we're very comfortable that we're going to show double-digit growth next year for the sector.

Chetan Udeshi - *JP Morgan Chase & Co, Research Division - Research Analyst*

And maybe, how much of -- how much retention do you see in those share gains in any of the new platforms that you might be bidding for either on diesel or gasoline? Because clearly the lead time on platform design is long and arduous. So...

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Typical cycles are 3 years. And I think, when you're talking about share versus what's going to happen to diesel sales, I mean, out into the future, we do expect diesel share to stay roughly the same, but diesel sales will drop out into the future years.

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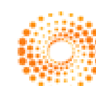

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Chetan Udeshi - *JP Morgan Chase & Co, Research Division - Research Analyst*

The question is more like is the 65% share in diesel sticking for any of the new platforms that you are bidding. Or will that, over time, come down? And same question for gasoline. So how much of the 5% share gains you might have won in the past design cycle is sort of sticking for a 2020 -- post-2020 design cycle?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Well, you're asking that. We're asking that particular future [a bit]. Look, the -- we are talking about the sort of current wins, and the current wins that -- the 65% is in the bag. And we're all on those platforms now, so it'll -- some of that will ramp up through the year, as we talked about. And we'll get to the 65% by the end of this year. So yes, from a pure market share point of view, of course, if we're going like this, there'll be a bit of a carryover into next year, but of course, that then depends on how many diesel cars are actually sold next year and what will come through in our numbers. And on the market share gains associated with gasoline, those are not going to come in -- some of those aren't coming in until '21, sort of '20, '21, that sort of time frame. So it ramp up over time. And of course, the next generation of bids haven't really started yet. We're still finalizing all those bids, so that's sort of somewhere over -- further into the distance. And just to be clear around the sales growth for Clean Air: I don't think we actually did say double-digit growth when we talked about it at the Capital Markets Day. We sort of talked about mid- to high single-digit growth, and that's still where we expect to be. [Nancy]...

Sebastian Christian August Bray - *Berenberg, Research Division - Analyst*

Sebastian Bray of Berenberg Bank. I will have three, please. The first is on the Efficient Natural Resources business. I think it was mentioned earlier that the pace of sales growth in the fiscal year 2019 could be partly constrained by a desire for high-quality sales. What is the difference between a high-quality catalyst sale and a lower-quality one? And then 2 on batteries, please. The first one is on the guidance in the release today for 2019 sales growth in the battery technology or Battery Systems part of the business. I think it's alternative powertrain. Where does this come from, please? Is it incremental sales in eLNO, is it from the existing Battery Systems business? And finally, one on the capacity announced -- or forthcoming capacity announcement in eLNO. How long exactly -- how fast could you build this facility just in terms of pure build time, as opposed to permitting or customer-testing cycle? And would you expect, number one, the build time; and number two, the -- potentially the capital intensity of this expansion to drop once you have the main facility online?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, so I think I got all those questions, but I'm going to start with Jane. Maybe you can give a bit more color. Have we got a microphone that Jane could use? Martin, perhaps you could give it to Jane. Just talk a little bit about what's good-quality, high-quality business rather than (inaudible).

Jane E. Toogood - *Johnson Matthey Plc - Sector Chief Executive Efficient Natural Resources*

Excellent question, of course. In this particular instance -- you could define quality in many ways, of course, but in this particular instance, high-quality business is business where we're bringing the most value to customers and also deriving the most value for JM, okay? So I think, from that, you can infer. Thank you.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Thanks, Jane. The second question, before I hand over to Alan, if you want to sort of give a little bit more color on the build program. But I think we didn't give guidance for Battery Materials on its own. We gave guidance for New Markets in its totality, and we're not going to give -- we're not going to break that down by subsector. We were talking about the New Markets sector as a whole. Alan, did you catch the questions for Battery Materials?

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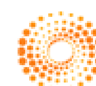

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Alan E. Nelson *- Johnson Matthey Plc - Sector Chief Executive New Markets and Group Chief Technology Officer*

I think I did. The question was just generally around the time line for the commercial build, the demonstration-scale build and how fast can we go in respect of both of them. And I guess, what I'd say, suffice to say we're going as fast as we possibly can. There's a number of rate limiting steps for both the demonstration-scale facility as well as the commercial-scale facility. There's permitting, both environmental. There's build et cetera. There are still some long-lead-time items, pieces of equipment that you have to order that take a fairly long time to actually get delivered. So we're doing all of these in parallel right now, parallel work streams, but with an overarching eLNO program, capital management feel to it as well. But suffice to say we're going as quickly as we possibly can and in line with our customer sampling and time line needs, as Robert articulated, in terms of that overall qualification cycle.

Robert J. MacLeod *- Johnson Matthey Plc - Chief Executive & Executive Director*

And the question about capital intensity. Yes is the answer. We would expect the capital intensity to come down over time. The first plant, as you build the first large-scale plant, always is going to take a little bit more. We're building-in as much flexibility as we can to make sure, yes, that we have the flexibility to make different materials and exactly how the material evolves. But one -- once we get that first plant running, the second plant, the larger plant, will be a greater or lesser, it depends on terms you want to talk about, of capital intensity and more efficient. Okay, all right, we've now got a microphone problem. If we could pass the microphone to the front here. Thanks, [Victoria].

Martin John Evans *- HSBC, Research Division - Analyst of Global Chemicals*

Martin Evans, HSBC. Just a quick question for Anna, I think -- well, 2 things. The legal settlement that you referred to, GBP 50 million, just maybe clarify what that was. And secondly, in the actual release, Page 20, I spotted a contingent liability, is that new news or something that's been sort of bubbling away in the background?

Robert J. MacLeod *- Johnson Matthey Plc - Chief Executive & Executive Director*

Well, who wants to do -- I'll take that. I mean the -- we're not -- I'm afraid we're not going to give much more detail than or any more detail than is already in the announcement. The note, as you absolutely referred to, on Page 20 in the release, the contingent liability, is a separate issue from the one we've -- that we settled last year -- well, yes, last year. And -- but -- and that's -- well, we are not going to say anything more about it other than what we have in the release.

Martin John Evans *- HSBC, Research Division - Analyst of Global Chemicals*

And the GBP 50 million that has been settled, what did that relate to?

Robert J. MacLeod *- Johnson Matthey Plc - Chief Executive & Executive Director*

Well, as we described, it was a product issue that we settled on a no-fault basis with a customer. Okay, [Nancy], can you come to the front? Actually there's another one. There's another question over there.

Charles L. Webb *- Morgan Stanley, Research Division - Equity Analyst*

Charlie Webb, Morgan Stanley. Just a few. Maybe, John, for you, first up, the health of the HDD market clearly had a very strong performance into the end of the year and into the -- and in the first half. How do you see that as we move into next year in regions like the U.S. and in Europe? And then on that as well: The China opportunity, you talked -- hinted that maybe there's an opportunity to take share there. So perhaps just walk us through what that means. On eLNO, I mean, now obviously you're going to do a larger pilot plant. Does that mean you can onboard more customer

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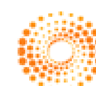

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opportunities? Or is that what you need, to just go through those processes with the existing, I think, 7 you have, I think, currently going through that process? And then finally, fuel cells, we haven't talked about it for a while, but there's a lot more noise around hydrogen, especially in Europe and in other markets. So are you seeing more interest from an energy stationary perspective for fuel cells?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, well, why don't we take those in the order in which you asked them? So John, do you want to start off...

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Yes. So heavy duty, obviously a very strong year this year. In North America that was driven by Class 8 trucks strength. We're seeing that trend will continue through the end of this calendar year, so again H1 to H2, we're probably going to be stronger on our U.S. Class 8 heavy duty in the first half compared to the second half. In Europe, the European growth story was all about the ramp-up of new products. These are effectively the second generation of Euro 6 heavy-duty products that are coming out in Europe right now. And we haven't finished that full ramp-up in the '17, '18 fiscal year, so that will continue for a bit. So there's a little bit of room of growth in European heavy duty. And then as you say, in Asia we're still bidding on platforms for the Euro 6 truck platforms in China, so the opportunity is that, if we win some of those opportunities, we could exceed the targets of our plan. But that's still an unknown at this point.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay. On eLNO, the larger pilot plant is principally around delivery for our customers, and so to meet the -- we've talked a bit about the sort of quantity required to go through B samples and C samples. It's -- so the -- having a 1,000-tonne capacity rather than 500-tonne capacities enables us to do -- to have more -- run more programmes. But the number of customers are not the key driver here. We're being -- as I talked about, we're being quite choiceful about the customers that we go after and we talk to. Rather than trying to get massive numbers of customers, it's more around those targeted customers and making sure that we deliver for them, so -- but this will give us the greater capacity to deliver for those -- on those programmes. And finally, on fuel cells, yes, we haven't talked about it for a while. It's good to say that it is making money. For those of you who've followed us for a while, you've known that fuel cells lost money for a number of years, actually quite a number of years. It's -- it made money last year, and so it is a sign that there is an opportunity in that market. And we're looking at it and how it develops going forward. So yes?

Unidentified Participant

I'm wondering if I could ask a question about pgm content within the catalyst business. It is no secret that the South African pgm market is challenging Russian sanctions, whether that has any effects on you. What's the strategy around sourcing pgms from places that you might be able to manage to get your growth projections?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

You are looking at John, but actually the person that's sort of more involved in the strategy for the pgm market is Jane because it's -- it falls within the Efficient Natural Resources sector. She's -- her sector sort of sources metal on behalf of John's business and the group. So...

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

She's my supplier.

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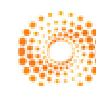

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Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

A key supplier.

Jane E. Toogood - *Johnson Matthey Plc - Sector Chief Executive Efficient Natural Resources*

I work very hard for John, yes. So clearly what we do is to refine pgms. And we can source metal from a variety of sources; and refined pgm is a part of our supply for John's business, for example. And of course, that gives some real assurance about being able to supply irrespective of what might happen in whatever economic environment or world geopolitical environment that's happening. And so that's very -- and that's why we're the world's largest refinery of secondary pgms. Our strategic raison d'etre is to make sure that we have a good, secured supply for John. And we can therefore uplift our supply of secondary pgms to John to make sure we have that assurance of supply all around the world. And we have refineries in all 3 regions of the world, okay?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

And I'm pleased to say there's a very good relationship between our customer and supplier between John and Jane. Now you've been very patient with your hand up there. And can we just try and get the microphone over? And I think there was another question over here.

Charles Greig - *Citigroup Inc, Research Division - Graduate Associate*

Charlie Greig, Citi. Not been mentioned, but India also going -- undergoing significant regulatory shift in the auto cat space. Are you guys looking at that market? Is that -- do you see growth coming through there? Heavy duty in China, if you did manage to win incremental share, will that be something you could fulfill with your current capex plans? Or will you need more on top of that? And also, pgm refining in China, you've got the new plant that's ramping up but obviously low content on older recycled catalysts. Is there any guidance on when that eventually might start contributing, when you might start seeing some kind of uplift from that?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, I guess I could probably answer those questions, but do you want to do India and China?

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

Well, India, in this year, we actually had a very, very strong year before the -- their version of the Euro 6 legislation, but yes. There is a reasonable-sized opportunity in India. Most of that opportunity in India is on the heavy duty side. And we have plans in place to progress to be able to deliver on that market as well. And...

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

And then the China...

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

On heavy duty China, yes. The plans that we have in place, we will have the capacity to be able to take on more than is in our current plant. So if we win more, we're going to be able to deliver.

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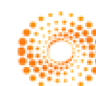

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Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

So that's the new plant that I mentioned before that we've approved. We approved, so it's in the sort of early stage of the build at the moment. And it will be ready for the time for the -- when the market picks up. And new plant, with all our sort of know-how for many, many years, it will be a very efficient plant too. So we should have the capacity that we need if we were able to win additional market share. So on the pgm refining in China, it is early days. Now poor Jane. You don't have a microphone again. We're not doing very well on the microphones today -- it's not very -- it's -- at the moment, it's not around the car market or the recycling of auto cats, but Jane, maybe you want to talk a little bit about the opportunity there.

Jane E. Toogood - *Johnson Matthey Plc - Sector Chief Executive Efficient Natural Resources*

So it is early days as yet in terms of refining autocats in China. There's hardly any on the vehicles at the moment. And the refineries started, and we can't expect to see a significant contribution of that or from that for a few years yet because I would describe the market really as quite nascent in China. But we took the strategic decision to go in there partly to make sure that we could probably support John's business as he grows in China; and also because, as that market develops, as the leading supplier here, we want to make sure that we're setting the brightest standards and so things are done in the proper way. And we can do that by being early in there. So that's what we've done.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

So our major -- while we get the microphone up to Adam at the back -- where -- how are we doing? Okay, you're moving microphone now. But basically, at the moment, we are doing refining for industrial customers at the moment. And that market will carry on, but the development of the auto market is -- as Jane said, will take some time to come. Sorry, Adam. You had a follow-up.

Adam Robert Collins - *Liberum Capital Limited, Research Division - Analyst*

Yes. I had a couple, please. So maybe one for Anna. On capex guidance of up to GBP 390 million for this year, I wondered if you could give a bit more granularity around that. In the past, you've talked about an investment of around GBP 100 million for the global ERP platform. Is that still a fair number? How big is the Poland investment? And could you help us understand the phasing of the GBP 200 million investment for the commercial -- scale battery plant? And then the second one was just on what we didn't discuss on batteries. It's the timing of a first customer in the battery area. When do you expect, at the earliest, one of the trialists to qualify the materials? What would be a reasonable expectation for the earliest that you'll see customer validation?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay, Anna, since he very politely asked you the question...

Anna Manz - *Johnson Matthey Plc - Chief Financial Officer & Executive Director*

Yes. So the ERP system, first. It's still of a similar order for SAP alone, but of course actually that's just the centre of a platform of systems. And we're putting other systems around it as we drive a consistent way of operating across the group. And we will continue investment there next year. The Polish plant is of the order of GBP 100 million, give or take. And we're commencing build on that in the year, although it won't all be spent in the year. And the phasing of the battery material plant, we actually commenced serious build kind of halfway through the year. I'm not going to tell you exactly how it phases, but you can work from that, given the time line to commissioning, a sensible assumption of spend in the year.

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Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Okay. And on the qualification cycle, we gave the -- some information on Slide 31 about the process that we go -- that car companies go through; and the rough time lines for the A, B, C samples. And of course, some -- there's a typical time line. Some car companies, some cell companies might be quicker. Some might take a little bit longer, so it's hard to say exactly when we'll build, but the key time when you actually sort of bid for and formally bid for is in the C sample stage. And -- but the reality is OEMs don't take many, many, many people through the B sample stage because it's quite a lot of testing and work for them. So when you're on that stage of sort of narrowing down to -- you've got more confidence that you're going to be on a platform, but the actual formal bid process is at the C sample stage.

Adam Robert Collins - *Liberum Capital Limited, Research Division - Analyst*

I look forward to the Monte Carlo analysis of the revenue opportunity in this area.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Well, yes. Well, we can over-science these things really, but we are better at this, the chemistry science, than maybe some Monte Carlos. Any other questions? Yes, we've got another one from Andrew. Is there a microphone near you? We had a microphone clash in the middle. So Andrew?

Andrew Gregory Stott - *UBS Investment Bank, Research Division - MD and Research Analyst*

Just a follow-up question, one for John. The retrofit market in Germany. There's a lot of talk about 6 million pre-Euro 5 cars that need to be recalled and retrofit. Is that an opportunity for JM?

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

It could be. It's still kind of moving around a little bit, but it is a possibility that there will be some opportunity there.

Andrew Gregory Stott - *UBS Investment Bank, Research Division - MD and Research Analyst*

And the sort of revenue per vehicle you might attach to that conversationally?

John F. Walker - *Johnson Matthey Plc - Sector Chief Executive Clean Air & Executive Director*

The variety of solutions are pretty broad, so it's kind of hard to put a number on that right now.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

There's another one in the -- right there.

Jean-Baptiste Henri Rolland - *BofA Merrill Lynch, Research Division - Associate*

Jean-Baptiste Rolland, Bank of America Merrill Lynch. I heard you mentioned that -- you saw the high ultrahigh density segment of the cathode market to account for about 1/3 to 2/3 of the overall cathode market. So on midpoint, it sounds that you're seeing this segment to be around 50% of the cathode market. And it's -- right now it's standing more as a -- it's more seen as a niche, as a premium segment. And I remember from your CMD you were mentioning that eLNO was more targeted as a premium product at the niches of potentially luxury cars et cetera. So I'm just

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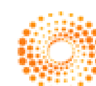

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wondering. Have you seen the opportunity evolving in the ultrahigh density market? And do you see the opportunity for eLNO to be potentially big versus advanced NCA and 811? Or are you still focusing on niches?

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

Well, we see the difference between a -- sort of the lower-density materials -- and I don't know. If you can get a mic, and then you can give a bit more color in a second. But the lower-density materials are sort of more useful for sort of the hybrids and sort of low-range vehicles. The sort of higher-range vehicles where you need the sort of higher density for longer is something where eLNO can play in. That's where it will compete with the other materials in that market, the sort of advanced NCA, the 811s. As 811 improves, as it inevitably will, and as advanced NCA comes into play, those are the ones that we'll be competing against. We'll have to see, but it's very much around pure-battery electric vehicles rather than hybrids where you're going for longer-range vehicles rather than sort-range vehicles. Is there any more color you'd like to add, Alan?

Alan E. Nelson - *Johnson Matthey Plc - Sector Chief Executive New Markets and Group Chief Technology Officer*

Yes, not much more colour, except to say, when we were talking at Capital Markets Day, we gave some very broad numbers in terms of if the overall market would be full battery electric. I think we ranged it from 4% to 25%. And we said, if that 4% to 25% would be full battery electric, then we had a range between 0.5 million to 3.3 million metric tons of cathode material. What we've done since then is we've done some refinement in terms of the market, where we see our customers going; and in terms of their vehicle launches, their time lines; specific vehicle requirements to actually hone in on what we've defined as the ultrahigh-energy density market, the market where we see eLNO being ideally suited but also where we're going to see some competition from advanced high-energy materials such as advanced NCA and advanced NMC 811 as well.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

But we don't see eLNO, as the way you described it, as a complete nichey product. I think it's the sort of high value -- it's the sort of product that enables the mass adoption -- or potentially a product that enables the mass adoption of BEVs because it gets that higher range and that sort of total cost of ownership. Because the energy density per cycle and cycle life are the key determinants here to how material will be affected. Okay, another question. We've got, we've got another question here in the front, if you're allowed to move over from the middle and move over into this side.

Chetan Udeshi - *JP Morgan Chase & Co, Research Division - Research Analyst*

Same follow-up question on high density. How many typically -- do you have a sense of how many competitors you think have the similar technology at this point? So when you are doing the testing phase, sampling pace -- phase with customers, do you have a view of who could be doing the same thing with their own product? Just to gauge the competition in the high-energy density market.

Robert J. MacLeod - *Johnson Matthey Plc - Chief Executive & Executive Director*

That's quite hard for us to judge. I mean, look, there are a number of people out there talking, as we know, talking about the higher-end -- higher-material density materials. And we don't think there's anybody else who's got an eLNO-type material. We think that is at this stage unique, but there are other people looking at 811 or even 9-x-x; people talking about higher, higher and nickel content and advanced NCA. So there's a number of people out there looking at it, but as far as we know today, none of it's commercialized yet. None of it's sort of -- because there are still issues around how you actually make that material work effectively in the -- to get the right level of stability et cetera. So I think there's still work to do. There's a few people doing it. I don't know exactly how many, but it's hard for us to judge that.

Are we done? Well then, thanks very much, everybody, for your time and for your attention. Look forward to seeing you again in 6 months' time. And for those of you we'll see on the roadshows, we look forward to seeing that too.

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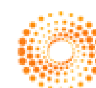

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So thank you very much, everybody.

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