

PLATINUM 2006



Interim Review

Q&A's following the presentation in London - Nov 14th 2006

Q1: Paul Walsh - Morgan Stanley - Analyst

Can you just talk a little bit more about the switch you're seeing away from platinum into palladium within the typical automotive non-diesel markets, and whether or not the Japanese trend is going to be something that will extend to, for example, to the U.S. or other regions?

And can you quantify the level of demand that you've seen so far in absolute terms for platinum from the HDD market and how that might progress over the next 12 to 18 months as the legislations come on stream?

A1: John Cullen – Johnson Matthey - General Manager - Sales

In Europe where a large % of the fleet is diesel and already requires Platinum, the opportunities for using more Palladium in gasoline cars are limited, as the majority of gasoline powered cars are already fitted with Palladium catalysts.

In North America switching is accelerating and Palladium catalysts are beginning to be introduced part-way through the life of models rather than when the model is replaced. In Japan the rate of switching has increased greatly in 2006 and we would expect this to continue next year.

On the heavy duty diesel side of the business, the technology used to meet the tighter legislation will determine the platinum and to a lesser extent the palladium demand. The next step change in heavy duty diesel legislation will be in the U.S. in 2007, Europe in 2008 and Japan in 2009.

On the heavy duty diesel side of the business, the ramp-up in legislation really will affect the platinum demand, so the next step change is in heavy duty diesel. Legislation will be in Japan in 2009, in Europe it's in 2008 and in the U.S. it's 2007. It's just there's some extra metal this year, but the big ramp-up is 2007 in North America followed by 2010 in North America. So they're the changes that will drive platinum and to some extent palladium demand in heavy duty diesel.

In terms of amount of platinum demand this will be several hundred thousands ounces of platinum, although it is difficult to give a definite number as it depends what technology is used. Some manufacturers or region will use SCR (Selective Catalytic Reduction) technology, this uses a base metal catalyst, with a small platinum oxidation catalyst used to clean up ammonia. Others will use EGR (Exhaust Gas Regeneration) together with a platinum oxidation catalyst and may also use a platinum coated filter. This second technology uses significantly greater quantities of pgm than SCR technology.

A1: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think compared to the retrofit market, which was something over 100,000 ounces, once it moves into mainstream systems for new vehicles, where OEMs are actually fitting catalysts and filters, that demand starts to multiply, and that's what you're going to see over the next couple of years. It's going from a relatively limited amount of platinum, if you will, to something approaching 0.5m ounces going forward.

But again as John said, the timing of that is very interesting because there's still some technology decisions to be made as to how far this will actually penetrate.

Q2: Paul Walsh - Morgan Stanley - Analyst

With the jewelry situation in platinum in China, would we expect to see some restocking moving into next year?

A2: Neill Swan - Johnson Matthey – Sales and Marketing Manager

Yes. If you look at pipeline stocks of platinum at the moment, they're relatively low, but that's not to say there isn't a lot of platinum in the shops, however.

When we visited China a couple of weeks ago, the manufactures and retailers were fairly optimistic about retail sales for the rest of this year. It's a very auspicious year this year for weddings and platinum really is dominating the bridal sector in the major cities. So they were quite confident that they would sell quite a bit of platinum between now and Chinese New Year.

Of course in terms of restocking it very much comes down to the price, and as we've seen, the Chinese manufacturers and retailers tend to buy in the price dips, so they'll obviously be looking for opportunities there. So there could be some restocking, it really depends pretty much on how the retail sales work out, and also it depends on the price.

Q3: John Reade - UBS - Analyst

You didn't mention rhodium. The fact that you're seeing lower glass demand for platinum this year would probably imply the same for rhodium, I assume.

A3: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

Yes, the rhodium demand tends to be reduced by that but you've got to think about rhodium mostly in terms of auto catalyst. That's the dominating consumer of rhodium.

Q4: John Reade - UBS - Analyst

And I see that you forecast that the rhodium market is in deficit for something like 43,000 ounces for this year. How big do you think the stocks out there are? When are we going to run out of this stuff?

A4: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

If you're talking about Russian stocks for example, we believe now they have very little rhodium stock left. I think there was a time when there were a variety of stocks held in various places in Russia. And bit by bit most of the metal has, we think, come out.

What you have got to remember about rhodium is that, it's the same story in South Africa as it is for palladium. You expand platinum mining and you get more rhodium whether you want it or not. I think with the change in South Africa, which is quite important in that they're digging more UG2 ore out of the ground and UG2 tends to be richer in rhodium than the traditional Merensky ores.

So the trend in supply from South Africa, which is of course the major rhodium producer, is going up. But it's adding more to keep track with demand because it is still the metal of choice for reducing NOx and will be for some time to come. So that tight situation we can see extending forward to quite a while.

Q5: John Reade - UBS - Analyst

And have you come across any comments about substituting away from rhodium? I've heard a few things myself from the States but I'm not sure how likely they are.

A5: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think certainly rhodium substitution is something people who use it are always looking at. It never goes away. And certainly there are things you can do, for example, for alloy formulations used in glass manufacturing, where sometimes you can reduce the rhodium content while doing other things to the alloy. They'll be looking at that. And certainly automobile manufacturers look very hard at rhodium in terms of what they can do to take it out of the systems. That kind of thrifting, that kind of effort, is a constant. And it happens -- it happened when rhodium was \$2,000 an ounce and now I suggest it's just got more vigorous as the price has risen because people are looking for that opportunity.

Q6: John Reade - UBS - Analyst

I don't know whether there's any gas to liquid number in your platinum demand. Where will you put them when you do, would you consider that to be petrochemical or will that be chemical?

A6: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I guess we'll put that into chemicals demand when we see it. There are a lot of GTL projects out there. There are potential uses for platinum catalysts. Not necessarily just in the GTL catalyst itself, but also in the downstream processing of the fuels that come out of GTL. But they're a little bit further away at the moment, but I think when that does happen we'll probably make a specific comment about it. And I'd guess we'd put it into the chemicals numbers.

Q7: John Reade - UBS - Analyst

U.S. palladium jewelry demand - I haven't had a chance to read the review, is the jewellery pure or alloyed? And what do you think about the long term potential for palladium demand -- jewelry demand in the States? Doubling to 40,000 ounces is still a very small number. The potential there must be quite large.

A7: Neill Swan - Johnson Matthey – Sales and Marketing Manager

All the palladium jewelry in America is 95% pure. They've gone for the same quality standard as platinum. It's only in China where they've moved to a higher purity palladium.

There's a lot of excitement about it in the industry at the moment. The American industry has been going through a fairly difficult time recently, and the higher prices of platinum and gold have hurt them because retailers haven't been able to hit the necessary price points. They've obviously been looking at materials that can help them hit these price points, yet offer the same qualities.

Palladium ticks all these boxes and that's why there's a great deal of excitement. But there's a huge amount of education that's got to take place before palladium becomes an established market. If you look at the growth of platinum, as a model for palladium, you'll see that actually it was a slow burn market in America. It gradually picked up. I would suspect palladium to be the same.

Q8: John Reade - UBS – Analyst

So if you assume that total precious metals jewelry demand in the States must be about 20 million ounces, what do you think ultimately palladium could take of that?

A8: Neill Swan - Johnson Matthey – Sales and Marketing Manager

It really is too early to tell. The jewellery being produced by US manufacturers is only just starting to get into the retailers. There is no major promotional activity going on - only what the manufacturers are doing together with the retailers – and there's a huge education job to be done with consumers, most of who probably won't even know what palladium is.

Q9: Jonathon Jayarajan - Deutsche Bank - Analyst

You alluded earlier to the Euro IV standard leading to higher level of loading for platinum in the catalysts. Is there any idea you can give us an indication of what sort of difference it's made in terms of numbers?

And can you give us idea of what you're thinking on the Euro V and whether that'll be a similar step forward when that comes through?

A9: John Cullen – Johnson Matthey - General Manager - Sales

Yes average loadings have gone up. The increase in loadings varies from manufacturer to manufacturer but obviously we've seen heavier loaded oxidation catalysts and also the introduction of platinum coated filters on some larger diesel cars. We expect that next year, the majority of new diesel cars in Europe will also have platinum coated filters.

Euro V will be formally introduced in 2010 but we think there will be incentives from 2008. We don't know what the formulations will be yet. However between now and then, we expect manufacturers to thrift pgms from their present systems and then to increase them again to meet the tighter standards for Euro V. I would expect another increase in average loadings, as was the case for Euro IV.

A9: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

But you always hear talk about this kind of saw tooth pattern. The standard comes in, thrifting, standard, thrifting, and so on.

You know the emission standards are getting incredibly tight. I'm sure you've all seen those graphs showing the little box you now operate in compared to the big box we used to operate in. But it's phenomenal how much emission can actually be dealt with and how tight some of these standards are actually going to be.

And that is favorable to the PGM demand. Yes, the manufacturers are very resourceful in terms of thrifting. They work very hard at that, but they're always playing catch up against the demand for cleaner emissions.

Q10: Andy Smith - Ridgefield Capital - Analyst

Any speculation that you've heard, that we might have not, about the platinum ETF either way. And what do you guess the producers' reaction would be compared to, say, the producers who were behind the silver and gold ETFs. And have you got your SEC submission ready.

A10: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think the last part of your comment probably answers your question. I think the producers would view the introduction of the ETF with some concern. I think one of the things it could lead to, are higher prices and also more volatility. And we've seen already that that can have quite serious impact on the demand, and that must be a concern for the producers going forward.

In terms of the rumors Andy, you've probably heard more than I have or the same ones. I guess what our comment would be is I think there have been some elements who would dismiss the fact you can have an ETF in platinum. I certainly think that our view would be is that it's far too early to start dismissing the idea of an ETF in platinum at this point. I've heard various things, even this morning, about it's definitely going to happen, it might happen, it's definitely not going to happen. Our view would be that the investment funds are pretty strong players in this market and if this is the product they want, we wouldn't be at all surprised if this is the product they eventually get.

Q11:

Could you fill in the gap and do palladium in diesel, where that's got to, technically and in the market as well?

A11: John Cullen – Johnson Matthey - General Manager - Sales

Sure, for the first time in 2006 we've seen palladium in diesel, although the quantities are small. It's only being introduced on a few models and in those models a fifth to a third of the platinum has been replaced by palladium. Our view is that going forward this will continue to happen and the process will be gradual but progressive. Platinum will continue to be the main metal in these systems, but palladium's introduction will be more widespread and it will represent a significant source of demand for palladium over next few years.

Q12: David Holmes - Dresdner Bank - Analyst

When they were contemplating the silver ETF, I believe the Silver Consumer Association that got together and objected to it. Is there an equivalent organization in platinum and palladium, or platinum at least that could object to an ETF?

A12: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

We're not aware of any consumer body that's going to object to the platinum ETF at this point. I dare say there might be one eventually, but I'm certainly not aware of anything of that nature.

Q13: David Holmes - Dresdner Bank - Analyst

If palladium substitutes platinum in diesel catalysts, and just talking about one fifth to one third reduction in platinum ounces used, how many ounces of palladium does it take to replace that? Is it the same number of ounces or is it a larger number of ounces?

A13: John Cullen – Johnson Matthey - General Manager - Sales

Generally the car companies are changing the system at the same time that they introduce palladium so it's difficult to compare them exactly. However if the systems were identical it is more or less a one to one substitution - an ounce for ounce replacement.

Q14: Priscilla Ross - Keith Bailey Rogers - Analyst

What rand/dollar exchange rate have you used for your projections on price? With a lot of variation on the exchange rate, what do you see the impact on South African supply of PGMs?

And is there any currency impact with the Russia ruble on the palladium market?

A14: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

We tend to use the rate prevailing at the time that we put the report together. So I guess we've been using a rand exchange rate something over 7.

I think the main impact of relative weakness of the rand at the moment is, as I said in the presentation, is that the rand basket price of metal goes up substantially. This makes the economics of the investments they're making on the Eastern Bushveld look that much more favorable than they did two or three years ago. And I think we've seen this year there's been quite a substantial increase in pace of the development of these new mines on the Eastern Bushveld. That's probably the biggest impact that we can see from the rand going forward.

Having said that I would imagine that the South African mining companies are naturally very conservative on the rand, and I doubt very much that they've got the kind of exchange rates that we're using in this report in their forward projections. I think they'll have been more conservative on their rand projections simply because that's what they tend to do.

So what I'm not saying is that if the rand does strengthen again that's going to damage necessarily the investment on the Eastern Bushveld. I think what's set in motion and will happen. But right now, clearly it's very favorable for them.

The Russian ruble; I really don't think that has a huge impact on what we see in that particular area. It's a dollar revenue market for Russia. And I think the only thing that we would say, and in fact more importantly, is a high oil price tends to reduce the pressure on Russian state stocks to export metal. And we've seen a very high oil price in the last 12 months. And I think that's a more important thing to look at probably than the ruble itself.

Q15: Craig Sainsbury - Citigroup Smith Barney

Just a question on platinum stockpile. Obviously there's a lot of new legislation coming in the automotive sector. Platinum price has been rising. Could you tell us if you've seen any changes in the stockpiles of platinum held by the automotive producers, and if you expect to see any over the next foreseeable future?

A15: John Cullen – Johnson Matthey - General Manager - Sales

The short answer is that we've seen very little change in stocks. On the platinum side, maybe a very small decrease and I think there were some indications of strategic stock-building in rhodium but again we do think it was small.

Q16: Mark Smith - RBS - Analyst

Can you comment on the commerciality of fuel cells and is it still 10 years out?

A16: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

It really depends on what area you're looking at. Clearly there is going to be a market, particularly in direct methanol fuel cells for electronic applications. For laptop power using methanol cartridges. I think that's coming relatively quickly. I think one of the disappointments has been the slowness with which fuel cells for domestic power consumption, the medium sized units, has actually come through.

The jury in terms of automotive demand, I suggest, is still out and that is still some way away. If you look at the announcements that are made fairly regularly in the press by the major car manufacturers, General Motors, Honda, who are very active in the fuel cells field, I still see nothing that really looks promising inside that 10-year time frame. And in the end as far as fuel cells are concerned and certainly in terms of platinum demand there, it's automotive demand eventually that's really going to drive this particular application as far as platinum's concerned.

But in the short term, if you go to our fuel cell factory in Swindon, we are making fuel cell membrane electrode assemblies for commercial use and we are selling them. So it is a business, it's real, it's just the rate at which it's going to grow is still very difficult to call I would say.

Q17: Paul Walsh - Morgan Stanley - Analyst

Can you talk in absolute terms about the size of demand for platinum from the catalyst filter market? Looks like that's all incremental gain for you guys and clearly only growing stronger moving forward.

A17: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think coming up with an absolute figure for soot filters as separate things, I don't think we'd really want to do that at this point. It is substantial. A lot of the soot filters and soot treatment we've seen to date didn't use PGM at all, they used things like ceria and iron as an injection into the fuel, which then burnt the soot on the [actual] catalyst filter.

Soot filter loadings are quite significant. They tend to be loaded a little bit more heavily than the equivalent oxidation catalyst. So it's a substantial amount. To put an absolute number on it, I don't think we'd want to do that at this point in the context of this Interim Review and presentation.

Q18: Paul Walsh - Morgan Stanley - Analyst

Can you just try and tee up for us some of the negative announcements we've seen on auto production in the U.S. with what appears to be good demand for both platinum and palladium in the North American market. Thanks.

A18: John Cullen – Johnson Matthey - General Manager - Sales

North American auto production was down - around 2%. On the platinum side, the reason for the increase in the numbers was driven by diesel. This year we've seen platinum catalysts used in a few models of the larger passenger pick up trucks. In addition to the light duty diesel, there was incremental platinum demand from heavy-duty diesel and finally there was incremental demand from retrofit business. So they were the key drivers, even though production was down.

Q19: Jonathon Jayarajan - Deutsche Bank - Analyst

If you assume that every laptop in the world has a fuel cell, is this like a 1% effect on platinum demand, or is it a 5% effect?

A19: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I would say it would be to the lower end of that kind of number that you're talking about now. The actual platinum loading in the catalysts which are used in these things is really quite small. It really depends on how far it penetrates. You're all laptop users. Are you going to go out and buy a laptop that can use one of these things? I think that really remains to be seen. So my view would be, although it's a very interesting technology, it's going to be at the lower end of that kind of scale you were talking about Jonathon.

Q20: John Reade - UBS - Analyst

Back to diesel in the States again. Some published studies have said that they see double digit market share for diesel in the States in, I can't remember what it was, 5 years, 10 years? What do you think?

A20: John Cullen – Johnson Matthey - General Manager - Sales

When we looked at the numbers we thought something like a 10% market share by 2015 was realistic. Whether it happens or not we'll have to wait and see.

A20: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think a lot the vehicle manufactures are working on diesel engines and diesel ranges of vehicles, but it really depends on the consumer at the end of the day. Are they going to go out and buy these vehicles? There's still a legacy of the very poor diesel vehicles that were introduced in the '80s in the States. It take a lot to overcome that. We've heard a lot this year about the American consumer downsizing their vehicles with the petrol price shock when gas went to three bucks a gallon. But the reality of that is they went from having a very large humongous SUV down to a kind of large SUV, and that was downsizing. So to say there's going to be headlong rush into diesel, I think that 10% by 2015 isn't a bad number. And it's certainly the kind of thing that we would support looking in our forecasts going forward, John. I don't think we've got any particular insight that says that's wrong.

Q21: John Reade - UBS - Analyst

What do you think about the chances of Democratic led Congress pushing for higher fuel standards or CAFE, whatever they call it in the States, where there's potential to boost diesel proportions up?

A21: Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

I think that's a distinct possibility. And obviously the diesel is one way in which you can address the CAFE average. It's certainly part of their thinking in terms going forward of how they're actually going to meet some of these CAFE standards.

But apart from anything else, the modern diesel engine is fantastically well suited to some of the vehicles that they're now putting these engines into. They've a lot of torque, a lot of power. In the end for the American consumer, a lot of it can be just down to grunt, the right power and the right torque. And the diesel engine can meet that need so . . .

Q21 (cont): John Reade - UBS - Analyst

They just need to be pushed into it.

A21 (cont): Mark Bedford - Johnson Matthey - Director of Precious Metal Marketing

Well, obviously a lot of the after-treatment strategies come into that. And a lot of those after treatment strategies, especially from 2010 forward, are going to be using a lot of metal, there's no doubt about that.

Well thank you very much indeed for attending this morning. As I said, anybody who hasn't grabbed a Review, there are some on the way out. And thanks for coming.