

# **BHP**

## **Jansen briefing**

## **Q&A session 1**

**15 September 2021**

**Paul Young (Goldman Sachs, Analyst):**

Yes, morning and evening, team of BHP. Thanks for the presentation, super comprehensive and certainly the economies of scale benefits are pretty obvious with this project.

I had some questions on the technical aspects of the project. It's around the geology and mining method and noting there are several seams in the basin in Saskatchewan. Is your geology or seam height different from other producers? Also, your proposed panel mining method, is it different from other producers? Thanks.

**Rag Udd:**

Thank you. Look, great question. What I might do is send that one over to Cheryll. I think she's our deep expert in this area.

**Cheryll Godwin-Abel:**

Thank you. If you're familiar with the potash basin, we're mining in the Lower Patience Lake. This is similar to a neighbour mine from ours. So, we do have a similar ore seam as that. The differentiation for us is that the equipment we're using is matched to our ore seam, as opposed to that. So, I believe that answers the question. Apologies, I might just leave it at that.

**Rag Udd:**

Thanks, Cheryll.

**Lyndon Fagan (JP Morgan, Analyst):**

Thanks very much. I just had a question on tax. Looking at slide 50, I was hoping not to set my model up in that level of complexity. I'm wondering if you're able to give a rule of thumb of how much tax you would be paying at current spot pricing and how many years, at today's price, there would be a tax-free period? Thanks.

**Rag Udd:**

Thanks for that. So, listen, Lyndon, it's fair to say that we won't be paying tax until the mid-2030s, in terms of the capital cost that we actually put forward. In terms of a rule of thumb that you could use in terms of the modelling, Adil, is there anything we could use to talk to that at the moment?

**Adil Currimbhoy:**

Thanks, Rag. With regards to the rule of thumb, spot on with the provincial and federal tax. I think with regards to the other two components, which would have been the potash production tax, which is provincial-related PPT, I would say mid-2030s is when you would start to calculate that amount, where we would be paying for Jansen.

Then with regards to the provincial royalties and resource surcharge, the combined total of 6%, that would start at first production, when potash sales are being made.

**Glyn Lawcock (Barrenjoey, Analyst):**

Hi, Rag. I wonder if you and your team could maybe just talk a little bit to the initial spend and the fact that in the result just gone, we wrote off about 30% of that spend. That sort of suggests we overspent in the first phase. Where did you get it wrong? I was trying to understand, just so that it gives me some confidence in the fact that we won't do the same again on the next phase? Thanks.

**Rag Udd:**

Yes, Glyn. Look, this is something we've spent a lot of time, as an organisation, taking a look at. I think you may have heard me talk about in the past, we're really not happy with the amount of capital that we've already spent on the project.

If I was to talk about a few areas that I think we've had some learnings in, first up is around the shafts. So, look, the shafts are quite oversized, compared to the first phase of the project that we're actually putting in place. We acknowledge that the capital that we put in place actually is higher than what we'd do if we were starting this project from day dot.

Now, the flip-side of that is, well, what have we learnt about it? That's actually why you hear myself and our CFO, David, talk a fair bit about the capital allocation framework. A lot of that actually came out of the learnings, in terms of the amount of capital that we put into projects and how we think about those investments longer term.

We spent the better part of a decade now Glyn, actually going through a process of engineering, understanding this ore body resource a fair bit better. With over 50% of the engineering completed, well over 40% of procurement plans in place and the experience that we've built up around this project over the last decade, we're actually quite confident that you won't see those same sorts of mistakes that we made earlier on within this project taking place.

Glyn, I do want to emphasise one point though, that for all the elements, in terms of the shaft, that I regret, in terms of the potential overspending for that, it actually becomes a differentiator for us moving forward.

So, the fact of the matter is, that this actually provides us effectively a lower capital intensity, in terms of future projects and future phases. For stages 2, 3, 4, in terms of the ability to actually haul more ore up the shafts, so not having to put in additional shafts for those future phases, which I think is going to give us a much lower capital intensity for those phases of the project, moving forward.

**Kaan Peker (Royal Bank Canada, Analyst):**

Thanks, Rag and team. Just wanted to understand the unit cost benefits and scale of Jansen. Maybe if you could give an understanding of the fixed and variable costs for the project? Besides scale, what other cost factors should we think about impacting unit costs post stage 1? Thanks.

**Rag Udd:**

Giles, do you want to handle that one, if you wouldn't mind?

**Giles Hellyer:**

Yes certainly. Yes, thanks. I think first of all, by fixed and variable cost perspective, if you think about this in terms of operating costs, it's pretty much around 50%. It depends on where you look at the process, whether it's at the mine gate or at the port, it varies slightly between 60% to 40%, to 40% to 60%.

I think in terms of the costs going forward, what we can expect from future stages, I think it's fair to say that we will see, subsequently with phases 2 and 3, if in fact they pass the capital application test and we look to invest, then we would look towards single digit reductions in the operating costs. It's really probably a little bit too early to tell what those costs would look like going through to stage 4.

I think in terms of construction, the questions relate to construction cost as well, I think. It's fair to say the capital intensities will vary quite considerably from stages 2, 3 and 4, compared to stage 1, which has obviously absorbed quite a degree of infrastructure development which is required to establish the shafts that Rag talked about.

So the intensity of going from US\$1,200 per tonne, as it is at the moment, to go forward, we'd be sitting around about US\$800 to US\$900 per tonne at subsequent stages. That's a reflection of the lesser requirement for the construction activity in future stages.

**Peter O'Connor (Shaw and Partners, Analyst):**

Good morning. A question just about the inventory pipeline. So as you ramp up and you're building markets and managing those expectations, the storability of potash in that global supply chain. How do I think about it relative to say an alumina versus an iron ore? Is it imminently storable? That's the first question.

Second, on the mining technique, could I just swing back to the first question about mining? Could you just take us through how your technique which on the video does look different to your peers and why?

**Rag Udd:**

What I might do there is to start with Mark Swan if we could in terms of talking about the storability components of it and then Cheryll, let's come back to the differentiators between ourselves and others if we could, please?

**Mark Swan:**

Okay, in terms of storability, potash is susceptible to moisture. So it depends on the climate it's in.

If it's in a very dry climate, it can be stored for years. If it's in a more humid climate, for instance somewhere like Brazil, storage could be as little as say, six months. So it's really between six months-ish and years.

**Rag Udd:**

Cheryll?

**Cheryll Godwin-Abel:**

Yes, so in regards to the mining method that we use, what you saw on the video is the long room and pillar mining method that is common in the Lower Patience Lake. The differentiator for us is that our borer miner is, again, sized to cut the seam.

So we're able to do it in one cut which means we go up to the end of the room, turn around and come back. I think that's what you saw on the video. Whereas our competitors with a lower profile bore, would have to do that room in two cuts. So actually four passes in a benching method.

So we have less infrastructure moves and we're able to complete and mine the high-grade potash in a shorter period of time.

**Rag Udd:**

That in turn leads to basically about a 10% operating cost differential as compared to our peers in terms of lowering our operating costs relative to others in terms of the efficiencies that are captured through that.

**Cheryl Godwin-Abel:**

Yes, that's correct. Thanks, Rag and just with that as well, it is a higher capacity borer miner too. So in addition to not having to take that extra benching method, we have a higher capacity system that is matched to our underground network of conveyers.

**Saul Kavonic (Credit Suisse, Analyst):**

Thank you, team. Quick question on essentially the valuation here where you have essentially now written down a book value around US\$3 billion. Pricing aside, what do we need to see upside to that US\$3 billion valuation here? Do we have to wait for stage 2 which may only occur in the 2030s to start seeing upside to that US\$3 billion valuation?

**Rag Udd:**

Look, obviously price will be a huge factor in itself and compounding, when we put together the valuations around potash, it'd be fair to say we work in ranges. So we work at where we see the price is much higher than historical and actually much lower.

Typically we'll work somewhere between about a US\$200 to US\$400 range in terms of the longer-term expectations that we've got. So what you'd need to see at this point, in terms of stage 1, is more than likely higher prices and to be fair, if the current pricing environment stuck around moving forward, that would actually see an NPV well ahead of what we've actually built into our modelled valuation.

In terms of the efficiencies, in terms of operating cost and foreign exchange, it's probably not as much in terms of the factors that actually impact the valuation that sits behind this. So it really is the price driver that's going to be the big differential for us here.

**Rahul Anand (Morgan Stanley, Analyst):**

Hi, Rag and team. Just wanted to touch upon perhaps some of those off-takes. So I wanted to understand, you talked on slide 18 about the pricing side of things. Various differing price time periods across the globe but if you think about volumes, what is the typical length of volume commitment in the market?

I mean, in a cycle where perhaps there is an over-supply, I'm just trying to understand whether you would be stocking inventories yourself or you would have long-term volume off-takes as well, which means the intermediary or the end-user ends up taking that inventory at whatever price there is. Thanks.

**Rag Udd:**

Thanks, Rahul and look, I think it'd be fair to say that we'll have a whole range of contract mechanisms that will be in place in the market. In terms of curtailing supply, one of the things that's important to understand is, thanks to the technology and the efficiencies that we think we have as the newest potash mine basically in the last 40 to 50 years, the reality is that our operating costs will be significantly lower than other competitors in the basin, is what we expect. So we actually don't see ourselves in a world where we actually will be restricting supply.

Mark, is there anything else you'd like to talk to about though in terms of those off-take agreements though?

**Mark Swan:**

Yes, I think typically in the industry you see off-take agreements of between three and five years and they tend to be framework agreements. Then against those, you get agreed cargoes. The cargoes are agreed on the price indices like we discussed in the slides, so it can be cargo to cargo or it can be up to annual pricing.

I think just to add to Rag's comments, I guess if you look at the value chains or the supply chains in the industry, rarely do they become globally full up. So there's always an opportunity to sell the product.

Sometimes producers make a decision around not wanting to sell because of price but I think for us, as Rag says, given our price position, I think it will probably usually make sense that the best outcome for us would be to sell the product to the customer at the price.

**Robert Stein (CLSA, Analyst):**

Hi. I was just wondering, is partnerships still realistically on the table given the sanction decision and where we currently stand in the project life cycle?

I ask that, given the benefits in sharing the project's return with an industry incumbent. You can potentially see a world where high prices occur in the lead up to Jansen being sanctioned and that sets off a wave of new capacity coming online, which would obviously lead to lower prices and more supply in the important first years of the project.

**Rag Udd:**

Thanks, Robert and look, partnership is always on the table and what we have said for a long time in this project is, we welcome a partner but we don't need a partner. So the mechanisms that we would look at in terms of actually putting a partnership in place is around value and what value we actually think it's going to deliver to our shareholders moving forward. At this point, we haven't been able to establish that value equation to actually match.

Now, suffice to say when you consider BHP, we don't shy away from partnerships at all. I mean, if you look at our Western Australian iron ore business, it is a partnership. BMA is a 50/50 partnership. Escondida in Chile has three different partners in terms of the links into it. Most of our petroleum assets actually bring partners in as well. So we have no aversion to actually working - and actually have for a long, long time, worked with partners but it really is only for value and up to this point we have been unable to actually make that marriage. That said, open to any further conversations on that in terms of others that may want to have that conversation.

**Hayden Bairstow (Macquarie, Analyst):**

Yes, morning all. Just a question on the phased expansion over time. I'm just interested - you've obviously got the capacity with the shafts pretty much in place. The four phases, is that more around market availability and expectation of space in the market? Or could you literally just do this in a larger chunk of capacity post stage 1? Thanks.

**Rag Udd:**

Yes, great question, Hayden. So it's built on a couple things. We actually felt that the four million tonnes is an optimised cap in terms of capital efficiency, both in terms of the hoisting capacity that we need at the moment and also the mine modules that actually sit behind that. So there's some efficiency around how the capital's been designed over the last five years to actually get that four million tonne stage.

Now, those subsequent stages will really be dependent on where we perceive the value to sit in terms of return to customers. If we think that we can bring on stage 2 earlier, we will advance that decision in the organisation to actually scale that up and you're absolutely correct, stage 2, 3 and 4, will actually be significantly de-risked by actually already having that shaft capacity basically in place.

Rag Udd: Is there any more detail you'd like there or is that ok?

**Hayden Bairstow: (Macquarie, Analyst):**

Yes, so structurally, underground is just more miners, I guess. So the next phase could be what, six, eight million tonnes if the market was there? Given the shaft capacity is already there?

**Rag Udd:**

We'll tend to work in increments of four million tonnes capacity. Now obviously, like any other operation we run, we'll look for any creep efficiency that we can actually bring into it but you should be thinking about this one as though it's four million tonne chunks to each stage.

**Lyndon Fagan (JP Morgan, Analyst):**

Thanks again. Just a quick follow up on realised pricing. So just looking at slide 51 where there's a number of indices and then a net back range.

I guess as a starting point, if I pull up on Bloomberg, there's a Canadian potash price of \$550 per US short tonne and that's quoted FOB. I'm wondering if you would refer us to that as a widely available benchmark to follow as a starting point - as the price assessment from green markets, I'm wondering if that's valid?

Then, I guess, if that's the case, can you talk a bit about any premium or discount that may be arising from that? It says here prices are influenced by grade and volume. Would Jansen be achieving a premium or discount to a relevant benchmark that you could point us to?

I guess the final thing is this net back range, it looks like about US\$100 a tonne, which I imagine comes through as part of the CFR revenue but also as part of the cost. Is that an appropriate assumption to model this project? Thanks for all of that.

**Rag Udd:**

Thanks for that. Mark, do you want to start in terms of the pricing mechanisms that sit behind that and we'll try and work through a few of those elements. Lyndon, we may take a few of those offline as well, because there's a fair bit of detail that may be worthwhile actually following up on, but let's start with that Mark.

**Mark Swan:**

Yes, so I'm not entirely sure what number you're looking at but it may be US FOB NOLA and that price is for imports into the US market which then go up the Mississippi River and deliver into the Midwest of America, or the Southern parts of America.

So that price would be valid as an FOB price in the US but you would have to deduct off that price the rebates and the discounts to get a credible net back price for that particular route for that particular supply source.

So pricing in the potash market is not like - there is no single number you can use. It's not very simple to do. I think it would be a mistake to use that number and to think you could just take that number and then use that because you've got a meld of different countries.

Each country has a different CFR price. Then each of those prices you need to adjust for the product mix, or the location and then the discounts and rebates. So you can go and talk to someone like CRU or some kind of external price agency who might be able to help explain it. Some of the analysts on the line - I don't know - you probably won't have access yourself but others may. You go and talk to some of the analysts who cover the other potash producers at the moment.

We'll happily have that conversation offline with you as well but it's not a straightforward calculation to do. So in short, you can't use that number.

**Rag Udd:**

Right, sorry what I suggest is Lyndon let's take that one offline for a bit of a follow up there. Because obviously we do want to ensure that we're giving you the most accurate valuations in terms of where we can take that moving forward.

**Kaan Peker (Royal Bank Canada, Analyst):**

Thanks Rag and team for taking a follow up. I understand the benefits of simplification, but just wanted to touch on your source about redundancies within the Jansen value chain.

I mean Jansen essentially is one mine. There's a long overland haul to port facilities and then to end customers. What redundancies are built into mine, rail and port to ensure that the potash is delivered in a timely manner and without quality degradation?

Noting that in one of the slides you've shown that your peers have multiple mines. Does that simplicity also reduce the ability to sign a larger percentage of off-takes? Thanks.

**Rag Udd:**

Great question and it is a trade-off isn't it, in terms of the operating costs versus the simplification elements that sit behind that?

If I was maybe just to start further downstream in terms of our port facility in terms of overseas shipments. You're right, we won't have redundancy built into those contracts to begin with, that said we do have the ability basically to ship into the US in terms of other customers, basically, if we were unable to export through Vancouver.

Honestly, I'm actually relatively comfortable with that overlay, given that that's actually a model that we've used quite successfully in iron ore for much larger shipments and also in Escondida as well in terms of our ability to actually ship concentrate out of that area.

If I get into rail, we actually do have redundancy coming into the system. So we will actually connect both spurs into both CN and the CP networks. So we will have the ability to actually choose providers. We see that as a key option, basically for us in terms of looking at the logistics of getting rail into Vancouver. And when you get into the operations themselves, there actually is a relatively high level of redundancy built into the plant and also the four bores that actually sit underneath underground.

Now, Mike Elliott is actually a bit of an expert here. So I might hand on to Mike to actually provide a bit more detail in terms of redundancy in the mine and also the plant, if you could Mike?

**Mike Elliott:**

Sure. Thanks Rag. So in the mine we will have four districts. Within those districts that's where we'll have our four borers operating and they are separated almost east and west of each other, sufficient distance such we de-risk that geological, geotechnical aspect.

And we obviously have the two shafts and future stages. They will both be equipped for production hoisting. And then when we get into the process plant itself, one mill will have two lines and each line is capable of just over 2 million tonnes per annum and can run independent of each other.

And then through those four stages, the way that we have master planned Jansen, is a bit of a design, once-built-many type approach. And so you can have four of those mills with two lines each. So you can get that picture of a lot of redundancy through the flow sheet of the mine itself from underground through shafts and surface processing facility.

**Rag Udd:**

Thanks Mike.

**Brenton Saunders (Pental Group, Analyst):**

Hi, just a couple of things if I may; the Westshore Terminal, it's not one you're managing. Can you just explain how you are quantifying managing the risk around the delivery of that part of the infrastructure?

And then secondly, please just give us a percentage of a benchmark price realisation that we can use for modelling purposes. It's all very well to say it's really complicated and there are 1,000 different prices, but at the end of the day we've got to use one.

**Rag Udd:**

Yes, okay, Brenton. Look I'll hand that benchmarking question to Mark in a second. It would be fair to say, though, potash is not as simple as say iron ore in terms of where you do have a fairly simple CFR-FOB combination. But Mark, if you can work that through in terms of providing Brenton bit more feedback on that rule of thumb.

Coming back to the Westshore Terminal, Brenton you're right. We actually will not operate that terminal. That said what we liked about Westshore was that we actually have an established operator who has actually been operating for over 40 years in Vancouver with an existing infrastructure that actually sat in place looking to transition away from the commodity that it actually currently exports.

So we actually saw that as a win-win opportunity for ourselves and commercially we've actually set ourselves up with a number of mechanisms in terms of delivery of that project, the ability to actually work with an EPCM or a selection of an EPCM that's actually working to build that forward.

It has some quite reasonable commercial terms set up with Westshore and governance around that project delivery over the next four or five years to actually ensure that we're well-protected in that regard.

Now important to understand here Brenton as you well know, this isn't our first rodeo when it comes to ports. So obviously we do operate a fair few ports ourselves and actually have a pretty good indication of what we're looking for in good operatorship of a port and we've made sure that we've actually built that commercially into our contracts. Mark, we might switch back to you in terms of the benchmark question.

**Mark Swan:**

Yes, thanks. I'm sorry I wasn't a little clearer there. I guess the challenge is - just to reiterate, there's a benchmark for a CFR price for each geographic region and the FOB benchmark which you may see in publications, is usually derived from those different CFR prices.

Now the issue with that is it's not properly weighted and also doesn't include the US sales. So it's not really a number you can just times by something and it will give you the right price.

What you can do and again we're happy to take this offline and we can have a discussion, but what you can do is you can look at the reported prices from potash producers who exist in the marketplace and that will give you an idea as they often report an US price and an export price. And then you can run a correlation to see what the discount against that FOB price is. So it's not going to be consistent all the time. So there's a few different things and there's a few different ways you can approach it.

As I said, there'll be people, some external potash analysts, they would have some ideas on that. We'll be happy to talk to you as well around how we look at it and what all the different options are to try and model the price. Sorry, I can't give you the magic number.



**Peter O'Connor (Shaw and Partners, Analyst):**

Rag, I just want to pick up further on the comments about system redundancy and the term you used earlier about creep. Is there a figure that you could give us, which would indicate what the industry creep rates have been historically and is there expectation about what you would have given that system redundancy?

And if I can just segue then to the seam variability, Cheryll, if you could just discuss given you will not need to bench, is there a lot of variability in the seams in potash? So could you possibly be constrained by cutting roof or floor because it's too tight? And does that impact you at some point or is it fairly continuous, the seam structure in potash?

**Rag Udd:**

Thanks Peter. So look I'll handle the question on creep and then Cheryll I'm going to come back to you in terms of the seam variability if you wouldn't mind.

Peter in terms of creep, fair to say too early to say on that one. And the reality is in terms of what industry participants are seeing on creep, that's really a difficult question to answer based on the supply curtailment that we actually see playing across the market and actually how capacity of a mine is actually determined, which tends to be effectively on a relative sprint capacity for a period of time.

So in terms of what the relative creep is out of each operation, we don't know. What I can say though is, based on our experience in iron ore, copper and coal is that once operators are actually given a new project and put in place, we actually always look for ways to actually push that capacity a little bit further and actually understand what's possible sitting behind that.

Now in terms of what percentage that looks like, geez I wouldn't want to say at this point, and in terms of modelling, I don't think you'd probably want to build this into your model as well.

That said, Cheryll, I might turn it over to you in terms of the seam variability. And Tanya, you may have a piece to have here as well given I know you've done a fair bit of work on the 3D modelling as well.

**Cheryll Godwin-Abel:**

Actually, I'm going to hand directly to Tanya as our expert in geoscience and the seam itself. So Tanya please take it away.

**Tanya Smith:**

Thanks, Cheryll. So yes, there is some variability in the seam height. It ranges from 3.7 metres to 4.4 metres. Now the benefit is that the borer is capable of adjusting the height for these various conditions.

And that's where the customisation of the equipment to the deposit is one of our advantages.

**Rag Udd:**

Thanks Tanya.

**Paul Young (Goldman Sachs, Analyst):**

Yes, hi Rag, I've got another technical question. And it's around the capacity of the first shaft and the potential future expansion. I'm not trying to put the cart before the horse here, because I think we are all still grappling with the economics from stage 1 as BHP has for the last decade.

I'm just trying to get a sense of the ease of the stage 2 expansion and what the spare capacity is in the shaft and looking at the maths around the 25% mass recovery to 30% mass recovery of run of mine to product conversion, it looks like you do have a fair bit of spare capacity in the main shaft, which would imply that the stage 2 expansion is actually - would be the lowest capital intensity of all the future expansions. Is that a fair sort of observation?

**Rag Udd:**

Look, I think that's a very fair observation. If you take a look at the capacity of the operations, the shafts are actually built to accommodate, basically, sort of 16 million to 17 million tonnes of finished product, in terms of capacity.

That accommodates, basically, for the ventilation necessary for the full four phases that actually sit behind that in terms of stages 2, 3 and 4. We look at stages two, three, and four, basically, being 4 million tonne increments basically coming forward on that as well.

So, we do see that the shafts as having been addressed for the subsequent stages out there and obviously that stage 2 would be a lower cost efficiency in terms of the subsequent stages that actually sit out there.

It's important to also understand, when you think about stage 2, the port capacity of Westshore is basically secured through stage 2 as well. Rail access is established in terms of stage 1, you actually have to build a rail spur to get yourself connected to both the CN and the CP lines.

That basically becomes resolved in stage 2, so it's really a matter of ore cars moving forward. So, it really is a module of building additional plant, and additional borers underground to accommodate that additional stage 2, which is why you see those IRRs of between 18% and 20% for those subsequent stages, Paul.

**Glyn Lawcock (Analyst, Barrenjoey):**

Hi, Rag. Just wondering if you could get someone to talk a little bit more about the First Nation agreements. I'm particularly interested in – you obviously said they were just refreshed, so I'm just wondering, were there any changes needed to be made?

When they are refreshed every five years, are there things like royalty resets available to the First Nation people? Maybe any concerns that are sitting out there at the moment with the First Nations people, and do your agreements differ to your peers in any way, maybe for the better or for the detriment of the First Nations? Just after a bit more colour. Thanks.

**Rag Udd:**

Great question, Glyn. Do they differentiate to our peers? Absolutely. But I'm not going to steal any more of Lindsay's thunder. So, I might hand it over to Lindsay, and she can tell us a little bit more about how these are differentiated from our peers, and also what's built into these agreements.

**Lindsay Brumwell:**

Certainly. Thank you, Rag. Thank you for the question. So, Jansen is situated on Crown and treaty land where they have agreements in place which sort of overviews the tax structures here.

However, our agreements provide economic benefit that are negotiated. The refresh provides an opportunity to tackle any opportunities or challenges, and luckily, we've actually had some really good relationships over the last 10 years, so we've made them a bit more robust on training and apprenticeships, and to be better able to take advantage of sanction as well as, and I can say honestly, the response to sanction was overjoy by our First Nations.

You can even check us out on social media in some of their comments because now they're really looking forward to seeing the full fruition of these agreements come together. Then just some of the other areas are social investment, apprentices and training, environmental information sharing, cultural heritage and they are quite robust. So, hopefully that provides a little more colour for you on your three-part question on agreements here.

**Rag Udd:**

Fair to say though, Glyn, maybe just to add a bit more on that is, we have made commitments around employment, as well. You probably saw on the deck that 20% employment will be towards Indigenous employees from the start of operations, basically starting up.

Some of the refreshers that we built into it were based on some of the feedback out of Western Australia in terms of the ability to provide feedback on the agreement and what that looks like. So, we've taken away any concerns or encumbrance, so that if there are concerns, people can voice their concerns openly and freely.

Fair to say though, and I think Lindsay has put it really well, we have got a fantastic relationship. It is a different structure and setup as compared to Australia and Canada in terms of those treaty agreements, but really, really, good relationship set up here, and hopefully that sets us up for quite a few years to go.

**Robert Stein (CLSA, Analyst):**

Hi, I might have missed the detail on this in the presentation, but on slide 37, you talk to capital expenditure being 85% CAD. I was just wondering, is that fully floating in terms of the currency exposure, or have you hedged that exposure? Just trying to get an understanding how movements in the CAD can drive capital expenditure either up or down.

**Rag Udd:**

Yes. Great question. Robert, look, we haven't hedged at this point. We're fully floating, and our rationale behind that is, look, this is over a six or seven year construction period, so actually relatively comfortable with the float at this point.

Obviously, that's something we stay close to as we go through these major capital project opportunities. If there is an opportunity, we'll take a look at it. At this point, we've decided to be fully floating on this one.

**Peter O'Connor (Shaw and Partners, Analyst):**

Rag, just circling back to this issue of capacity of the system and the overall Jansen project, and from your last answer, it appears that ventilation is ultimately the cap for the capacity of Jansen.

The volume is there, you can get into the two shafts, without building another one. Is that the way I should look at this? Is that why the move to fully electrification and reduction in emissions helps you in that regard?

My second question on – just to slide 30, and to Cheryl on the mine layout. What defines the layout of the potash mine? Is it structurally controlled by faults? Are there dykes? Do we have seam rolls?

Are we going to have a quarterly one day in the future where you tell us about some geology you've hit which we didn't know about? What is the typical geological feature in a seam and what defines that layout of your panels?

**Rag Udd:**

Good stuff. Listen, so, Peter, a couple of elements here. I'm going to hand over to Mike Elliott to actually talk about where our bottlenecks sit in terms of the shaft and the plans for the mine design because he says it very eloquently in terms of actually working through that structure, in terms of laying it through.

Then, Tanya, I might get you to pick up on the structures, features, and other elements that actually determine how we go about designing our mine capacity. So, Mike, start with you, please.

**Mike Elliott:**

Sure. So, Peter, what defines the ultimate 16 million, 17 million tonnes per annum is ventilation, firstly, but also the capacity of our production shaft, secondly. It can be a little bit neck and neck in our modelling.

Just to put a little bit of colour on that ventilation point, there is a linkage there to electrification, but there's probably a stronger linkage there to our high-capacity borers because what you want to do is, you want to push ventilation right up to your mine face, where your machines and people need to go to maintain and operate those machines.

So, obviously, fewer borers means fewer mining faces, and therefore, you can stretch your mine further, and get more from your ventilation. So, there is a link there between our mining system approach and ventilation.

Now, in terms of capacity, and maybe just circle back on a previous question, and just to clarify how we're going to get ore up our shafts, our service shaft will be equipped with two 50 tonne skips, as well as our service cage.

That is all that we need for stage 1 volumes. For all stages – the remainder of stages, I should say, we're equipping the production shaft with four 69 tonne skips. So, significantly larger conveyancers.

They will do the bulk of the heavy lifting in stages 2, 3, and 4. So, it's a combination of the work from the production shaft, plus ventilation, which determines the overall 17 million tonnes per annum.

**Rag Udd:**

Thanks, Mike. I might turn it over to Tanya if you could talk a little bit in terms of the mine design and the features. I think it would probably be worthwhile, actually, talking a little bit about the 3D modelling if you could as well, Tanya, just to talk about the sensitivity and what that actually allows us to pick up with structures and other elements, as well.

**Tanya Smith:**

Sure. I'll start with the basic sort of formation. What we've got are multiple, flat layers of potash salt and there are clay seams between them. So for the mining layer – we're mining the Lower Patience Lake and we'll be following at the top of that horizon, there's a clay seam that we will be following. That's going to guide where the borer goes.

In terms of structure, that's where the 3D seismic really comes into play, where in terms of potential hazards, there can be vertical collapse structures. They can be very short just going through one layer, or they can actually be quite tall, that go through hundreds of metres. So, that's where the 3D seismic is very valuable. It allows us to see those.

So, when we see those in the 3D model, we create buffer zones around them, so we can avoid them. Now, in terms of local hazards, there will be clay seams that may come in and out above the mining area.

We will use ground penetrating radar to identify those, and then we will be able to either bolt, cut or keep mining, if it's deemed to be stable. I guess the last point, I think Rag mentioned, so there are areas of the mine where there's some lower grade, but we can mine through them without any hazards.

The only thing that we do is try and avoid those areas in terms of permanent infrastructure. So, we would want to put permanent infrastructure away from that, and we've been able to do this in our design.

**Rag Udd:**

Thanks for that.

**Tristan Lovegrove:**

Thanks everyone. That is the end of the presentation. Can I thank you all for taking the time to listen to the team. Hopefully, it's really brought it to life how exciting the project is. But any further queries, do shoot it over to the IR team.

We do have a Q&A session later this evening for the UK, European, South African, and North American time zones. Thank you again for taking the time. Any queries do let us know. Thank you.

**Rag Udd:**

Thanks all.