New South Wales Government
Independent Planning Commission

TRANSCRIPT OF MEETING

RE: HVO NORTH AND SOUTH OPEN CUT COAL CONTINUATION PROJECTS (SSD-11826681 & SSD-11826621)

NSW DCCEEW MEETING

PANEL:	SIMON SMITH (Chair) JANETT MILLIGAN MICHAEL CHILCOTT
OFFICE OF THE IPC:	STEVE BARRY BRAD JAMES CALLUM FIRTH TAHLIA HUTCHINSON
NSW DEPARTMENT OF CLIMATE CHANGE, ENERGY, THE ENVIRONMENT AND WATER:	MATTHEW RILEY RONAN KELLAGHAN

OBSERVERS

DEPARTMENT OF PLANNING, HOUSING & INFRASTRUCTURE:	JACK TURNER TEGAN COLE
LOCATION:	ZOOM VIDEOCONFERENCE
DATE & TIME:	10:00AM – 11:30AM TUESDAY, 14th JULY 2026

<THE MEETING COMMENCED

MR SMITH: So, we're recording the meeting, so we'll go straight to business. And but before I begin, I'd like to acknowledge that I'm speaking to you from Cammeraygal land and I acknowledge the traditional owners of all the lands from which we meet virtually today, and pay my respects to their Elders past and present.

Welcome to the meeting today to discuss the Hunter Valley Operations North and South Open Cut Coal Continuation Projects currently before the Commission for determination. The Applicant, HV Operations Pty Ltd, is seeking consent for the HVO Continuation Project.

The project involves the continuation of mining at the Hunter Valley Operations Mining Complex until the end of 2045 for the North and to the end of 2042 for South, including an extension of approved mining areas and mining of deeper coal seams. The Hunter Valley Operations Mining Complex is an established multi-pit open cut coal mine operation located approximately 24 kilometres northwest of Singleton in the Singleton and Muswellbrook shire local government areas.

My name is Simon Smith and I'm the Chair of the Commission Panel. I'm joined by my fellow Commissioners, Janett Milligan and Michael Chilcott. Michael's in the room with the staff.

In the interests of openness and transparency and to ensure the full capture of information, today's meeting is being recorded, and a complete transcript will be produced and made available on the Commission's website. The meeting is one part of the Commission's consideration on this matter and will form one of several sources of information upon which the Commission will base its determination.

It's important for Commissioners to ask questions of attendees and to clarify issues whenever it is considered appropriate. If you are asked a question and are not in a position to answer, you may take the question on notice. Following the meeting, the Commission will advise you in writing of any questions taken on notice that the Panel considers require a formal response. Any subsequent response or information provided to the Commission will be published on our website.

I request all participants here today to introduce themselves before speaking for the first time, and for all members to ensure that they do not speak over the top of each other, to ensure the accuracy of the transcript.

We'll now begin. So, perhaps, just if you wouldn't mind introducing yourself by saying your name and your role, please.

MR RILEY: So, I'm Matthew Riley. I am the Director of Climate and Atmospheric Science at the NSW Department of Climate Change, Energy, Environment and Water, and I am currently the Acting Executive Director of Science and Insights. And I'll pass to my colleague, Ronan Kellaghan.

MR SMITH: Thanks. Ronan, I think you might be on mute.

MR RONAN KELLAGAHN: Yes. Hello. Ronan Kellaghan. I lead the Net Zero Emissions Modelling Team which sits in Matt's branch in his substantive role, so in the Climate and Atmospheric Science Branch of DCCEEW.

MR SMITH: Thanks, Ronan.

MR JACK TURNER: My name is Jack Turner. I'm the Team Leader for Resource Assessments for the Hunter Region for the Department of Planning, Housing and Infrastructure, and joined by Tegan. Tegan?

MR SMITH: Great, thanks.

MS TEGAN COLE: Good morning. My name is Tegan Cole. I am a Senior Environmental Assessment Officer working in the Hunter Team with Jack Turner.

MR SMITH: Great. Thank you. Thank you very much, everybody. Now, I was wondering perhaps, Matthew or another team member, if just as a background you might just give us a brief overview of how the modelling is done for the coal industry as part of your overall emissions inventory modelling effort.

MR RILEY: Yes, thank you very much, Simon. We've prepared some slides, so my colleague, Ronan, will share those slides. And just as he gets those up, I will make a few introductory remarks as well. I'll give just a little bit of a background on the emissions modelling within the Net Zero Emissions Modelling Team of DCCEEW, a little bit of the history, so the rationale for the modelling, the scope of the modelling, and how it's evolved over time.

I'll then hand over to Mr Kellaghan, and he will go through and provide some further detail on the specifics of the emissions modelling for the coal mining sector, with a focus on emissions from fugitive emissions but also emissions from fuel combustion in the sector as well.

So, I might start that we're very proud of the emissions modelling program that we put together in DCCEEW. It is a program that actually has been running for quite a long period of time and I'm quite proud to be involved in the program going back all the way to the 2000s where my role was to provide advice to Planning and the EPA on emissions from the coal mining sector and other sectors in the NSW economy.

With various changes in policy over time, the profile of the modelling has waxed and waned as policy has developed. But one thing that has been consistent is our commitment to getting the best information available on current emissions in NSW and also what future emissions might be. I represented NSW on the National Greenhouse Gas Inventory Committee for many, many years. And my team members within the Net Zero Emissions Modelling Program have carried on that representation, and Ronan himself is now the NSW representative with Dr Robert Hinds on the National Greenhouse Gas Inventory Committee. So, I'll bring that just to say that, you know, we have a long program of work looking at modelling emissions in the coal mining sector, and indeed all other sectors of the economy.

If I then move back to about 2016, when the NSW Government implemented its Climate Change Policy Framework, there was a renewed vigour for the program, a renewed look at what our future projections might be, in particular because that policy framework introduced the target of reaching net zero emissions by 2050.

Moving forward and looking at 2019 when the previous government was working on the first net zero strategy, we then brought together and formalised, re-integrated the program and formalised it again. And since 2019, we've been basically doing annual updates for the emissions projections, to help inform government policy, to help inform an understanding of what's happening in different sectors, and also to guide some discussions.

A few things to note is that we do focus on direct emissions. So, the focus of the modelling program is on the direct emissions, greenhouse gas emissions that are actually attributable to the state of NSW. So, this includes all anthropogenic emissions and also removals of emissions that are related to anthropogenic activity as well.

Our core modelling is based on IPCC sectors, so the Intergovernmental Panel on Climate Change sectors, and is consistent with Australia's reporting obligations to the United Nations Framework Convention on Climate Change. And that's an important aspect –

MR SMITH: Matt, can I just ask a question on that point. We were looking before you joined us on one of your charts, where from a dropdown list we selected fugitive emissions, and that displayed coal and gas essentially. The diesel emissions for that sector included in fugitive, or do they appear in transport?

MR RILEY: No, they're included in what's called stationary energy, Simon.

MR SMITH: Right.

MR RILEY: So, they are fuel combustion activities in a stationary energy sector. Ronan will talk a little bit about that when we look into the detail, but it is an important point. When we consider the IPCC sectors, emissions from the activity of coal mining are split across several sectors.

MR SMITH: Right.

MR RILEY: That is different to the approach that the Net Zero Commission has taken with its sectors. And we provide support to the Net Zero Commission and information on emissions that align with those sectors. But our fundamental core modelling is based on IPCC sectors and that's important because we wanted to seamlessly align (or as best we can) with Australia's national reporting obligations under the UNFCCC. So, we want them to align with the national inventory, so that's why we take that approach, and that's how we build up. But we do slice and dice the emissions to package them up so that they align with the Net Zero Commission sectors as well.

When Ronan talks about this, Simon, a little bit later, he'll give you a bit of an insight into how we account for those different emissions.

MR SMITH: Thank you.

MR RILEY: So, we have a form of governance around the net zero emissions modelling. We've really solidified that with the establishment of the Climate Change Network within the public sector, which followed on from the passing of the Climate Change Net Zero Futures Act, the establishment of the Commission, but also the need for us to ensure that we really had sound governance around all of our projections.

But noting that we had always put a very robust methodology around these projections prior to the establishment of the Climate Change Network. And that includes publishing openly on the website our methods papers which we have updated regularly and noting that our emissions modelling undergoes independent peer review. So, we seek to, with any major change to the modelling approach, ensure that we have that methodology peer reviewed so it gives us that additional comfort with the methodology.

Just a thing to note as well, with the updated governance of the net zero emissions modelling program under the Climate Change Network, we have established a number of inner agency emissions working groups. In essence, we have for each of the main sectors, working groups established that include representatives of the key agencies across the NSW Government. Of most relevance to the Panel for this discussion is our coal working group, and the coal working group is chaired by DCCEEW and the Net Zero Emissions Modelling Team and includes representatives from DPHI, from the Department of Primary Industries and Regional Development, in particular NSW Resources, and also NSW EPA.

One thing to note with that group is it is a working group, that group comes together to actually provide us input into our assumptions that go into the projections. They provide a sense check from each of those agencies regarding how we handle future policy or program assumptions as well. And they're there to also just share information about what's happening across the sector as a whole.

As I said, it is endorsed by the Climate Change Network. I will note that from this year's projections onwards, we'll also be seeking to ensure that the projections are formally lodged with the NSW Government's Common Planning Assumption Group, so that's the group that maintains the common planning assumptions for strategic planning across NSW. And we will bring those for formal endorsement through that group, noting they currently aren't formally endorsed, but that is our proposal.

The reason I raise this is just to demonstrate to the Panel that we do try and bring a whole-of-government perspective to this. We do try and ensure that we capture as much information that we can, within each of the sectors, to ensure that we have the best information available to us to guide the overall projections, because of their importance for policy and program standing.

One thing that I will note for 2025 for this update, there has been a significant expanded engagement with the coal industry itself. In particular, this is because earlier iterations of our projections really rested much on approved rates of mining, and there was a little bit of disconnect between what was the approved extraction and what was actually likely to be actual extraction each year. Ronan will talk a little bit about that as we move on.

So, Ronan, if we kick over. One thing that I will note, and Ronan will talk about this, is we do model a couple of different scenarios when we do the emissions modelling, and this applies across all of the sectors. We start with a business-as-usual scenario, that's our baseline that we work from, and accounts for all of the major factors that might impact NSW emissions, including those macro trends, so population growth and also other macro trends and significant market trends as well.

Importantly, it excludes the impact of the Net Zero Plan and related policies, because we want to be able to quantify what the impact of those policies are. But it does inform the level of additional effort that is required to achieve our targets. Of course we now have our legislated targets, and what that gives us is it gives us a couple of different approaches to understanding what that emissions gap is between what is business-as-usual, what is the impact of our current policies and programs, and what additional work might be required to achieve our target.

So, for the policy scenarios that we model, these are defined under the Net Zero Plan and specifically related policies. They include all the current actions under Stage 1 of the plan. They include policies related to specific areas of note, so in particular here for the coal sector, it's the impact of the Commonwealth Safeguard Mechanism. Also it takes into account future initiatives likely to be supported through committed funding under the NSW Climate Change Fund. Importantly for us, it's our main tracking scenario.

So, we look at the policy scenario on current policies, and that guides our overall assessment of if we are on track to meet our targets. And as with last year's projections which will be mirrored by this year's projections, we are currently not on track to meet the legislated emissions targets in NSW.

So, with that, I might just hand over now to Ronan. Ronan, oh sorry, last slide, and then hand over to Ronan. It is a multi-sector approach. We do cover all of the sectors, it's a whole-of-economy approach. So, our modelling does include all of the emissions that we expect in NSW out to 2050 and beyond. Simon, your question is highlighted here. The two key areas for the coal sector are covered under the stationary energy, so fuel combustion used for mining, and then the fugitive emissions from coal extraction itself.

On the left-hand side, you'll see some of the key inputs that go into the modelling projections. Of importance here for the Panel is that our detailed coal mine modelling – our detailed coal sector modelling actually takes a mine-by-mine and in some cases, an area-by-area or seam-by-seam approach to understanding what is happening in the sector.

So, with that and that little bit of a lead-in to some of the detail, I'll hand over to Ronan, and Ronan will take you through the methodology in a little bit more detail and actually the results of our modelling for this year, and some context around the likely contributions from HVO as proposed. Thanks, Ronan.

And sorry, I should note, we are happy, Simon and Panel members, to take questions at any time through the presentation.

MR SMITH: Right. Well, I think we do have a lot of questions, but I think we should give Ronan a chance to lay it all out for us, and if so, perhaps colleagues, if there are questions or anything that isn't clear enough or you don't understand or points of clarification, let's just do that as we go. But then we'll hold our substantive questions until Ronan has finished his slides. Thanks.

MR RILEY: Thank you.

MR KELLAGHAN: And just feel free to interrupt, because I won't necessarily see hands up on my screen.

So, I'll take you through the methodology and the results for the coal mining sector. So, we touched on the way we inventory across the IPCC sectors. I've collated emissions for coal mining from fugitive emissions and from stationary energy, so what will show from now on in is coal mining in NSW, so it's just aggregated into that coal mining sector.

The information is based on our latest update which is our 2025 projections update. We aim for a release early in the year, that release has been delayed a little, so it's actually still pending release – we expect it to be released in the next couple of weeks, we're just waiting on confirmation from the Minister and the Minister's Office to release the projections. But I'll be showing you the latest projections data for the coal sector.

So, just a summary of the sector. It's currently about 13% of NSW emissions and it has declined about 28% since 2005, 2005 is the base year against which NSW targets are set, so that's the reason we compare to 2005. You can see from the graph that the majority of emissions are from coal mining and from fugitive emissions from coal mining. I haven't shown the oil and gas sector for NSW, that's really just the gas sector, I haven't shown it in this plot. But fugitive emissions from coal mining are about 95% of that sector, and about 79% of fugitive emissions are from underground mines, and you can clearly see that in the chart.

MR SMITH: So, Ronan, just to confirm, so this doesn't reflect any offsets purchased by industry to meet its Safeguard obligations?

MR KELLAGHAN: No. And Matt touched on the scenarios. I'm actually going to focus mostly on the business-as-usual scenario, I will talk about our policy scenario and what abatement assumptions that we have included in our policy scenario. And I'll also touch on the Safeguard Mechanism and the information that we provide on the Safeguard Mechanism and how that's related to on-site abatement versus offsetting.

But we – all of this data will not include any potential offsetting that mines will do under the Safeguard Mechanism.

MR SMITH: Thanks.

MR KELLAGHAN: The historical decline that you can see in this chart is really driven by closure of underground mines. Again, it's pretty obvious just from looking at the stacked areas, you can see the decline rate there in the largest slice. For our projections, we model a short-term increase out to 2030 and that's really driven by forecast coal production at 2030 increasing in the short term. And followed by a decline out to 2050.

The historical increase in diesel emissions reflects that shift that I mentioned from closing of underground mines to shifting towards the open cut sector. So, you can see a growing slice of the diesel emissions in the top part of that chart. That reflects that trend.

MR RILEY: And just noting that the diesel emissions in this chart are labelled as stationary energy.

MR KELLAGHAN: Oh yes, sorry, thanks, Matt. And I will point out as well that you can see from the stationary energy slice of this chart that diesel emissions are higher than fugitive emissions for our open cut mines. So, it's a larger slice of the chart.

Just a quick overview of the methodology. Matt touched on this. We do develop mine-specific projections, so we project every individual mine in NSW. We developed the projections based on forecast coal production, so that's really our proxy for estimating emissions, that's a forecast coal production. We take the current emissions intensity, and we model forward based on that coal production. But we also take the latest information from any modifications that are published on the Planning Portal website.

So, where we've got more detailed emissions intensity information into the future, we'll use that. And where we have more detailed or better coal forecast production, we will use that directly from the modifications. In the case of the HVO Continuation Project, we're taking the information from the latest amended project on the Planning Portal.

MR SMITH: So, Ronan, can you just – this is a very important point, I think. So, in terms of – you said, I think, that run-of-mine production is based on a bottom-up estimate of mine, of data from individual companies about what they expect to produce. Is that correct?

MR KELLAGHAN: So, our forecast coal production is actually developed in conjunction with NSW Resources. So, the Department of Primary Industries and Regional Development, the NSW Resources Team. There's, I guess, two parts to the forecast. There's a very near-term forecast which is called the forward program data, and that's what the mines themselves report to NSW Resources, and that covers the first three years of our projection. So, that's reported data directly from the mines.

Following that, we work with NSW Resources to project a best estimate of forward production beyond that point.

Now, what we have done this year is we have tested that production forecast with the industry. We've engaged with them and actually forwarded them our forecast coal production and asked them to comment and provide feedback. And that feedback was received from the vast majority of coal mines in NSW. So, the assumptions are we're reasonably confident in the coal production forecast, we've tested them with the industry, they're obviously subject to change and we'll update each year as things move around. But as of our cut-off date for developing these projections, we're very confident that it's the best sort of outlet that we have.

I'll talk a little bit about the scenarios we develop, because the coal production forecast does depend as well on the scenarios. So, we look at three difference scenarios. We look at approved coal extraction operations, so approved projects, in scenario 1. In scenario 2, we look at approved operations plus modifications that are currently under assessment in the planning system – so, that's all currently approved production plus any modifications that are under assessment. And then our scenario 3 adds to that additional projects for which scoping studies have been submitted to Planning, but they're not currently under assessment, so all we have is the scoping report, so it doesn't tend to have as detailed information as the full EIS once the project is lodged.

MR SMITH: And so, do you have, for example, so the list of all current coal mines and the expiry date of current approvals, and do you have any assumptions made about whether or not the approved operator may or may not seek to extend their operation?

MR KELLAGHAN: So, it's only based on what's in the planning system. So, under scenario 1, we will stop coal production at the end of the current approval, for scenario 1. And then for scenario 2, using HVO as an example, we will then continue that production out to 2042 for South and 2045 for North. And that would be the same for all modifications that are currently lodged within the planning system.

MR SMITH: So, then there is an unknown category essentially of currently approved mining operations whether they're operating or not, which may, for example, if their approval were to run out in 2040, that you don't know what they're going to do, but at the moment you assume that they will end at 2040.

MR KELLAGHAN: Correct.

MR SMITH: But it is possible that when in 5 years' time or 10 years, they might start thinking, you know, depending on the situation at the time, they may well seek an extension, in which case then that could be added into first of all, your scenario 3, and then perhaps as it progresses into scenario 2, and then if it's approved, scenario 1.

MR KELLAGHAN: Yes, that's correct.

MR SMITH: So, have you done any modelling of a scenario 4 which would be what if all currently – like, some kind of evaluation, is it technically, is the resource available and should the operator seek an extension, what the emissions would be?

MR KELLAGHAN: We haven't developed that scenario for this update. It's actually what we're planning – we're planning to add that scenario as you've described for our 2026 update. And whether that's based on a global demand forecast or whether it's based on, as you said, if all existing mines continue to operate, we haven't quite worked out the detail of that scenario yet. But that's a scenario we plan to add, but we don't currently have that model.

MR SMITH: Okay, thank you, sorry, I've broken my own rule about getting into detail.

MR KELLAGHAN: No, that's quite all right.

MR MICHAEL CHILCOTT: And Ronan, a question from me. You've got a shaded area there – I can't see at the distance I am what that shaded area is.

MR KELLAGHAN: Yes, so the shaded area really just reflects the range for the three scenarios. So, you can picture the bottom of that shading as the scenario 1 and the top of the shading as scenario 3. So, scenario 1 being approved mines has the lowest emissions trajectory. Scenario 3 having the most modifications, has the higher emissions. So, the shading just really reflects the range for those three scenarios. And the dotted blue line just presents out projections update from the previous year, so it just shows how we change year-on-year.

MR CHILCOTT: Thank you.

MR KELLAGHAN: I'll touch on the abatement assumptions in the slide. What's shown here does include some abatement assumptions. Again, it's across individual mines and it's based on the sort of … It's scenario-specific, so our abatement assumptions take into account how long the mine is approved to operate or how long the mine is proposing under a modification to operate. If a mine is due to close in near term, for example, we don't assume significant abatement for that scenario.

MR CHILCOTT: And when you use the term 'abatement', do you include within that, offsets, or is it only abatement technology that you're dealing with?

MR KELLAGHAN: When I refer to abatement, I'm really talking about on-site abatement, I'm not talking about offsets.

MR CHILCOTT: Okay. So, that's without then the consideration of offsets.

MR KELLAGHAN: Correct, yes.

MR CHILCOTT: Thank you.

MR KELLAGHAN: And I've just included this table just to give you an idea of the scenarios. This table is actually – it shows the change from in our current projections from the last update and how things can move around. So, things that have a line through it in scenario 3 have moved into scenario 2 for our latest update. And likewise,

things from scenario have moved into scenario 1. But just to note that the HVO Continuation Project is in scenario 2 for our modelling, and that is our central scenario. So, when we update our emissions dashboard, we take scenario 2 as our central scenario. So, again, just to reiterate, that's the approved mines plus those that are currently under assessment, that's our central.

MR SMITH: And why are the bottom-left ones in red?

MR KELLAGHAN: The bottom-left ones in red are new projects that were added into the 2025 update that weren't in our 2024 update.

MR SMITH: Right, thank you.

MR RILEY: And I might just note, Simon and Panel, on the slide prior to that/this one, Ronan will note the date there. With our modelling, we do have in essence a cut-off date which says this is the state of assumptions at this point in time. And then we move forward and finalise the projections. That's really important, because things can change on a month-to-month basis or sometimes a week-to-week basis. We can't continually update the projections at that rapidity.

So, we basically close off and say this is the status of each of these mines and our current assessment of whether they're in scoping, whether they're in assessment, or whether they've been approved on this date. But then we continue to – and that goes into the projections – but then we continue to track what's happening in the intervening periods and that's the second slide that Ronan's shown there. He's shown the changes in between December 2025 – and I think it's 29 June 2026, Ronan, on the next slide.

MR KELLAGHAN: Yes.

MR RILEY: And you can just see how things have moved across. Just to let the Panel know, we don't update the projections monthly. We have a cut-off point, this is the state of play, and then we model the projections based on that state of play on that date.

MR SMITH: Thank you.

MR KELLAGHAN: So, what we're seeing here is the information that will inform our 2026 update, but we'll push out the cut-off towards the end of the year, you know, probably around October/November time. So, we'll review all of the status of the assessments that are the modifications under assessment and then adjust our scenarios accordingly. And so, for the HVO Continuation Project, depending on the outcomes of the assessment, that could move from scenario 2 under assessment into scenario 1 approved.

And so, I'll just touch on what I refer to as abatement or emission reduction. Again, this is our assumptions for on-site abatement across each facility. It's been informed, again, through industry engagement. We developed an abatement scenario that was initially informed by what we could consider plausible abatement or possible abatement that could occur under various different policy settings.

And so, we had a high-emitting industries fund under our Net Zero Plan which was looking to fund certain projects. We also obviously have the Safeguard Mechanism which will to some extent incentivise on-site abatement, depending on the relative cause between on-site abatement versus purchasing of ACCUs or SMCs (Safeguard Mechanism Credits).

So, we initially developed a plausible abatement scenario, what we thought could happen and would be likely to happen under those various policy settings. And then we informed those assumptions through expanded industry engagement this year. And so, what we've assumed we've pushed the abatement out towards the mid-2030s, and what we've assumed is the diesel emissions at open cut mines would start to be replaced with low-carbon alternatives, so whether that's a biofuel replacement or whether it's a shift of the fleet to battery electric vehicles.

We've assumed pre-drainage and flaring at five open cut sites from 2029. So, again, we've looked at this at a scenario level, and we've looked at the length of the approved or proposed production, how long it's going to last, and chose to implement abatement solutions based on the life of mine. There's some goaf sealing at a couple of underground mines, it's fairly small levels of abatement, and then ongoing pre-drainage and flaring at underground mines.

We'll be reviewing these assumptions in our 2026 update. There's obviously information now on EPA's coal mitigation signals that might inform how we change these assumptions.

And this is just some points on ventilation air methane abatement, which is relevant to the underground sector, so not relevant to the HVO Continuation Project. But effectively, we've made assumptions for VAM abatement at just the Appin Coal Mine.

MR SMITH: Yes, so we noticed that in the EPA guide, there aren't any mandatory requirements for abatement measures for open cut; all of the prescriptions relate to underground mines. Do you think – does your modelling assume that's the case, or it assumes better than that?

MR KELLAGHAN: Well, we need to review that for our 2026 update. So, we develop these abatement assumptions prior to EPA finalising their coal mitigation guide and signals. So, Simon, we will have to – we will review that in our 2026 update. But as I noted on this slide, we actually do have open cut abatement assumed in our policy scenario, and that does include replacement of the non-road diesel fleet. So, it's a gradual replacement, you know, it starts in 2035 and it sort of ramps up gradually. And again, it's only applicable to those open cut mines that have extended operation out into the 2040s. We wouldn't expect, for example, a mine that's approved to operate to 2031 to replace its fleet with battery electric vehicles, it's those longer-term open cut mines.

And similarly for the pre-drainage and flaring, we have assumed some abatement at open cut mines from 2029. Now, that's not in EPA's mitigation requirements, so that's something we will look at in this update. But as I said, we did test these abatement

assumptions through the industry and we took their feedback and following that engagement and feedback, we left this abatement assumption in.

MR SMITH: Right. Would it be right to say that the EPA guide is sort of right now, short-term future requirements, but you're looking longer term based on …

MR KELLAGHAN: Yes.

MR SMITH: … EPA and industry to think that some of these things will become possible.

MR KELLAGHAN: Yes, that's right. And we'll often see when a mine submits an application for a modification that they'll talk about the feasibility of some of these measures currently. But, you know, this a longer-term view and our view is that while it mightn't be possible to replace a diesel fleet now, by 2035 there should be opportunity to start looking at if a fleet is due for replacement, if vehicles are due for replacement, there should be availability of battery electric or low-carbon fuel alternatives for them to start transitioning at that point.

MR CHILCOTT: And Ronan, what is the source of that information? You talk about industry inform, but where do you derive the 2035 likely scenario for possible replacement with electric vehicles and batteries?

MR KELLAGHAN: So, I guess our starting point for our assumed abatement or abatement scenario was based on some work that the Department commissioned a few years back. So, it was commissioned – we commissioned a company called Polaris to look at the feasibility of abatement opportunities for NSW coal mines. And so, that original scenario, that plausible abatement scenario, was informed by that. So, that looked at the technological and the economic opportunities for these abatement opportunities.

We then adjust that based on the industry engagement and based on how mining applications shift around on those scenarios. So, for example, if there's an announcement for a mine closure, for example, we might change or shift some of that abatement scenario for that mine if it decides … There was a recent announcement for Ashton underground, for example, that they were going to close early, and obviously we would shift any abatement assumptions for a mine that changes its outlook in terms of its life of mine.

MR RILEY: And I might – sorry, I might just add to that. As Ronan mentioned, he mentioned the Technical Feasibility Report commissioned by us and undertaken by Polaris. It's important to note that while that was a few years ago, we have been keeping track of technological advancements, but also, importantly, policy and program advancements as well. Ronan touched on the engagement with industry. It occurs directly through the Net Zero Emissions Modelling Team but also through some of our programs operated under the Net Zero Plan, for instance, the net zero industry programs, and also it takes into account availability of solutions that might be supported by policies, for example, the NSW Renewable Fuel Strategy.

So, while it is grounded in that technical feasibility from Polaris, we do have an eye on what additional initiatives coming from the NSW Government and elsewhere might move along the feasibility of some of those technical shifts.

MS JANETT MILLIGAN: I was interested in hearing a bit more about the technical feasibility study, engagement with industry, and how your thinking changed from one to the other. So, I guess I'm interested to know, industry engagement, what influence did that have on your thinking about what you had been advised in the technical feasibility study.

MR KELLAGHAN: So, the only thing that has changed from what we had in our 2024 projections update to our 2025 projections update, the only thing that's changed is the starting year of our assumed abatement. Now, that starting year wasn't necessarily as a result of feedback from industry; that was more based on our assessment of the pace of likely transition. It was based on our general approach to be a little bit more cautious about the potential abatement opportunity, our assessment of the likelihood of offsetting versus on-site abatement, our assessment of the life of mine and when we thought there might be opportunity for mines to start transitioning a fleet.

So, it was really based on a combination of things that we looked at. We actually didn't get much pushback or comment on our abatement assumptions from industry. They were largely comfortable with what we proposed. But again, you know, we do update this every year. This might change, we'll need to consider EPA's signals, we'll need to consider NSW are currently working on a new Net Zero Plan that will have a number of sector plans accompanying it. So, all of these things will come into our decision of how we model that abatement scenario.

MS MILLIGAN: Thank you.

MR SMITH: And Ronan, could I just ask two questions about the chart that you've got on the screen.

MR KELLAGHAN: Yes.

MR SMITH: There's kind of a bump in the underground fugitive emissions about 2040. So, that's one question. And then the other is, the stationary emissions disappear towards 2045 – is that because they're fully electrified or because there's no mining going on?

MR KELLAGHAN: So, the first question, that bump is – it's a function of the way we model the policy scenario, and it's related to Appin, and it's related to Appin Mine shifting from an operating mine to a decommissioned mine, and we don't assume VAM abatement on a decommissioned mine. And so, once production ceases, that little bump is that transition from an operating mine that has VAM abatement, so let's say 75% of the emissions coming out of the vent shaft are abated through VAM abatement, but once it transitions to a decommissioned mine, we don't assume that VAM abatement happens because it might not have the flowrate or the gas concentration required to actually run the VAM abatement unit. So, it just causes that funny little blip. It's more a function of the way we model that out than anything else.

MR SMITH: That's because the mine, the underground mine would emit more once closed than it did when operating?

MR KELLAGHAN: Well, it would emit … It wouldn't emit more unabated emissions, but it would emit more than the assumed abate – like, if you think about it, we're sort of assuming, you know, around 70/75% of the mine's emissions are abated through VAM abatement from 2033 on.

MR SMITH: And then the second part of the question was about the volume assumptions towards 2049, like the diesel emissions have ceased. Is that because it's electrified or because there's no mining?

MR KELLAGHAN: So, it's a combination of both. If I go back to the BAU, you can see the similar trend in BAU, so this is no abatement. And so, it's the – you can see the shrinking is aligned with the lighter blue component of the open cut. So, really from, what would it be, 2047 or 2048 onwards, there's actually only decommissioned underground mines remaining and that's the only emission source.

MR SMITH: Okay. Thank you.

MS MILLIGAN: Can I just say that's the challenging part, and that is to understand the role of exhaustion of current approvals in modelling. Is there anything you can say to us to help us with that issue? We've raised it a couple of times, I suppose, in a number of ways today. But clearly, the exhaustion of current approvals is significant in the trendlines that we're seeing.

MR KELLAGHAN: Yes.

MS MILLIGAN: How do we understand those?

MR KELLAGHAN: I mean, I would say that the trendline that you're seeing is really driven by that, it's by the expiry of approved operations, approved or proposed operations. So, that dotted black line that you see is business-as-usual, so that's without any abatement assumptions, that's without any sort of emission reductions, that's purely driven by a ramp down in production and mine production ending. So, it's really driving trend.

So, what we may see as we update each year, you can see that part of the chart from 2024 to 2030 that increases, what you might see or what you might consider to be a likely scenario is that sort of increasing part of the trend gets pushed on each year as new mining modifications get submitted into the planning system. And then the decline, the starting point of the decline as we do each update will push along as well.

I'm not sure if that answers your question. If you would like more specific information on each mine, how it's, what it's approved to in our modelling, and what it's approved to under our scenario 1 (approved) and under our scenario 2 (under assessment), we can probably take that on notice and provide that additional data to you so that you get a mine-by-mine view of that production decline.

MR SMITH: I think that would be really helpful, Ronan.

MR KELLAGHAN: There's some sensitivity around the data, but what we can do is we can present it in such a way that we get around any of the confidentiality issues that we have in providing mine-specific data. For example, we can just provide an indicative timeline for each of the mines.

MR SMITH: Yes.

MS MILLIGAN: Or even – I was wondering, Simon, could it be as simple as showing on these trendlines with dots, you know, as a mine exhausts its approval, if we just had them mapped on the trendline.

MR KELLAGHAN: Yes.

MR SMITH: Yes.

MR KELLAGHAN: We could –

MR SMITH: Where if you know, for example, that there are some mines where there just isn't any more coal, then it would be good to know that too. But often it seems it's some sort of more economic question rather than a resource question, you know, depending on what the price is at the time and the cost of extraction whether or not an extension would be sought.

I mean, ideally, and the reason we ask this is because we've been guided by the government policy to consider each application for an extension in the context of the trajectories that you guys have prepared effectively. And what we're considering is the extent to which if abatement opportunities are not integrated into approvals, mine-by-mine extension as they are considered, that some of the cumulative impact of those decisions may affect the other objective of the government's policy which is job retention in the future. Because if not enough abatement is integrated now, then other that may take up emission space in the trajectory that would not be available should another extension that's not been provisioned come forward.

That's the crux of our question, is to know how/what measures could be adopted or built into an approval if one were to be granted, that would keep up the pressure on abatement so as to help the sector as a whole achieve the government's expectations of its policy.

MR KELLAGHAN: Yes, we can take that on notice, Simon, and come back to you with what we can. We do, have in the past, looked at different forecast scenarios that account for likely production versus what's available as a resource to extract.

MR SMITH: Yes.

MR KELLAGHAN: So, maybe we could come back to you with some additional information.

MR SMITH: Yes, that'll be good. So, what we'll do after our call today, we'll formulate, send you a quick note just trying to be as clear as possible about how you could help us.

MR KELLAGHAN: Great.

MR SMITH: And respecting of course that you may – not all the information may be able to be released for commercial-in-confidence reasons and so forth, and we'll let you figure that out and give us what you can. Like, we don't need to know all the details about every single mine, we just want to know what the picture is.

MR KELLAGHAN: Yes.

MR SMITH: As at this mine, yes.

MR KELLAGHAN: Yes.

MR SMITH: Sorry to interrupt again, that's been very helpful.

MR KELLAGHAN: That's okay. And so, I'll just touch on the Safeguard Mechanism. We've actually calculated a declining baseline under the Safeguard Mechanism for each coal mine. So, there's 35 facilities in NSW and 26 of them are coal mines that were covered under Safeguard. So, we've just used published information on the decline rates and estimated it for each mine.

And so, the dotted black line shows the Safeguard facility declining baseline, the coal sector. And the dotted green line shows our policy scenario assumptions. So, what you see as the gap between the policy line and the Safeguard line is you could take as being what would be required to be offset based on our policy assumptions or based on our plausible on-site abatement assumptions.

And so, just to give you a couple of snapshots of that. In 2030, the sector needs to reduce emissions by 6.6 million tonnes, we've only assumed 0.3 million tonnes as on-site abatement. By 2035, similarly, about 6 million tonnes required under Safeguard, we've only assumed about 1.5 million tonnes of on-site abatement. And so, there is a gap that needs to be filled. Our current view or our current model trajectory is that only a proportion of the Safeguard Mechanism's declining baseline will be met through on-site abatement, and the rest would need to be offset.

It's tricky for us to account for offsetting in our projections. As Matt noted, we model direct emissions, including direct removals, with the boundary set as NSW state, that's the boundary of our emissions modelling. And so, without knowing where an offset is sourced, it's very difficult for us to fully account for the offsetting component of Safeguard Mechanism for NSW mines.

There's some work and discussions going on around transferred mitigation options or outcomes into jurisdictional transfer of mitigation outcomes. So, it's something we'll continue to look at and account for in the best way we can, but we'd need to

understand if, for example, an offset is being purchased from outside NSW, what's the transfer of that mitigation outcome, as it relates to the state in which the state was generated versus the state in which the offset was surrendered. So, at the moment we just show them as separate lines, we showed them as a Safeguard Mechanism obligation and a policy assumption for on-site abatement.

MR SMITH: And Ronan, are you aware, does the state target legislation – how does it deal with offsets paid for by, to offset emissions in NSW but which are executed elsewhere?

MR RILEY: So, Ronan, do you want me to take that?

MR KELLAGHAN: So -

MR RILEY: Sorry, go Ronan.

MR KELLAGHAN: You go, you go, I was just pondering how to respond. But yes, if you could, that'd be great, thank you.

MR RILEY: So, currently, Simon, in the way that we talk about the target, it is emissions in NSW. So, the target is related to the inventoried emissions as reported under the UNFCCC framework, so that is within that bounding of NSW as Ronan mentioned. The question of how we account for offsets, it comes up quite often. We have not specifically addressed that nor is it something that is addressed through the legislation. It is actual emissions emitted within the state during the year of the target minus the actual removals in the state during that year of target, without consideration of offsets.

MR SMITH: So, for example, so, the Hunter Valley Operations has proposed an emissions strategy that relies on the purchase of offsets both to meet its Safeguard obligations and that is proposing to go further than that, so that the net emissions of each operation offsets considered follow along the line of proportionable to the state net zero targets. But so far we haven't discussed with the company how that could be accounted for if those offsets are executed outside the nearest jurisdiction.

MR RILEY: Yes. And that's the challenge that Ronan was touching on; how we account for that. There is active discussions at the moment across jurisdictions as Ronan mentioned. There are also some uncertainties [clears throat] (excuse me), the type of certificate that's surrendered as well, and the handling of deemed savings, for example. It is not an easy problem to solve.

MR SMITH: No. But from an accounting perspective, like not a money accounting, but an emissions accounting perspective, Hunter Valley Operations, if it was … If you were reporting from the perspective of the NSW inventory custodian what the emissions were of Hunter Valley Operations, you'd be looking, okay, what are the direct emissions from site, so there's the stationary energy emissions and the fugitive emissions.

MR RILEY: Yes.

MR SMITH: And you would say, okay, that's what it is, but you would deduct or you would be able to consider offset emissions that led to an anthropogenic reduction in emission or an extraction of emissions, greenhouse gases from the atmosphere in NSW that would count. But from the perspective of your NSW inventory, if those anthropogenic measures were implemented elsewhere, they would not count.

MR RILEY: That's correct. We will attempt to, as best we can, tally up and report on offsets that have been purchased and retired under appropriate regulatory or policy outcomes. An ideal situation, and Ronan touched on this, would be if any entity was retiring offsets to meet their obligations, if they could report on the provenance of those assets, so the location where those offsets occurred, that would make things easier to do that interjurisdictional accounting that Ronan mentioned, and also would make it easier to ensure that we're not doing double counting either.

An example here would be if an entity covered by the Safeguard Mechanism in NSW purchased ACCUs generated within NSW as part of their obligations, in the inventory we would see emissions removals come through in the sector and be attributed to the land use – land use chain sector. We would also see reporting of offsets in, for example, using the coal sector, within the coal sector, and our job would then be to ensure that we netted out offsets that were domestic to NSW so that we did not double count those offsets.

But there still needs to be some discussions ongoing with clean energy regulator, with our other jurisdictional partners as well, to best handle this, because it's not a situation unique to NSW.

MR SMITH: Yes, it's complex. So, would it be okay, we might just think that through and refine our question to you to seek your advice on this matter as well.

MR RILEY: Yes, and happy to come back to you with additional advice on that after that question.

MR SMITH: Great.

MR KELLAGHAN: And Matt touched on it. There's the obvious issue of the location. At the moment, we have data on all of these Safeguard facilities and what ACCUs were surrendered in a particular year, and what types of ACCUs that they were, so what the project was. But we don't know where that project originated and we don't know the currency, the year of the ACCU either. So, ACCUs can be banked, so, you know, you could have a facility that has an operation in another state that's generating ACCUs, bank those ACCUs for future surrender. So, there's that accounting issue as well – Matt touched on it when he mentioned the issue with deemed credits.

MR SMITH: Thank you.

MR KELLAGHAN: So, the next slides, the final few slides just talk about HVO and compare HVO to the sector and to NSW. So, this first slide just shows – and I'm

focusing on our business-as-usual scenario. The reason I'm focusing on our business-as-usual scenario is we don't necessarily have … Our assumptions for emissions reduction or abatement aren't necessarily what we would say are locked in, right, we're making assumptions based on plausible abatement.

So, I think the best way to compare emissions is for our business-as-usual scenario. We can obviously provide additional information to you on the comparison for a current policy scenario, but really when the uncertainty exists with how much on-site abatement versus offsetting will occur, for the purposes of just comparing the project, I think it's worthwhile just looking at business-as-usual initially, at least.

The first slide, as I mentioned, shows HVO as approved. So, you can see in 2030, it's about 1.3% of the total coal sector emissions, so this is coal mining, this is Scope 1 emissions, coal mining. So, again, it's the fugitive and the stationary energy, the diesel component. And then obviously a very minor contribution in 2035. So, production ceases but there's some residual emissions as the mine decommissions and really rehabilitates. So, yes, you can see that in the chart with the emissions ramping down once production ceases in 2030.

For the Continuation Project, in 2030, HVO as a percentage of coal sector is 6.4%. In 2035, it's 7.6%. And then in 2042, which is the peak emissions year for HVO, it's 15.7%. These are all based on our latest projections update. When we provided advice to Planning or to EPA to Planning on the HVO Continuation Project, we were assessing against our 2024 update. So, if these percentages look a little bit different to any advice that you've seen previously, that would be the reason – it's just different or a more current projections update.

So, again we're seeing emissions projected under the current approval out to 2045. We see a significant ramp down post 2045, and again that's just that sort of residual emissions as the mine decommissions and rehabilitates.

And then comparing to NSW, so HVO as a percentage of NSW emissions. In 2030, it's 1%, so it contributes 1% of emissions to the state; 1.2% in 2035; and 1.4% in that peak year in 2040. So, compared to the original Continuation Project, the amended produces significantly less ROM coal and therefore there's quite a significant reduction in cumulative gross emissions over the course of the amended project.

And then just lightly, this slide just provides a breakdown of each of our scenarios for BAU and for policy and the coal sector's contribution relative to 2005 – sorry, the coal sector's reduction relative to 2005. So, I've highlighted our scenario 2 which we take as our central scenario. And so, you can see the percentage change for business-as-usual and for our policy scenario relative to 2030, 2035 and 2050. So, under our policy scenario relative to 2030, the sector reduces by 20% roughly; by 2035 it reduces by 47%; and by 2050 it's 94%.

The last three lines of this table also show the data for the Safeguard Mechanism scenario. So, when you take the Safeguard Mechanism scenario, that declining rate, you can see the percentage change from 2005 is a lot higher, but obviously we've

talked about the challenges of accounting for offsetting or accounting for how much of that obligation is met through on-site versus offsetting.

And that's it for the slides.

MR SMITH: That's been very helpful indeed, both of you. I'll just open up now to my colleagues if they have questions that remain unanswered.

MR CHILCOTT: Ronan, I assume that this modelling from the Department feeds into the Net Zero Commission's policy framework and that it's really for the Net Zero Commission to give us some insight potentially into how this fits in with the overall obligations that the state's trying to achieve in terms of reductions in time and how that is achieved by each sector. So, it's fitting this into that broader policy setting is more one for Net Zero Commission discussions rather than Department – is that correct?

MR RILEY: Only partly correct. So, the Net Zero Commission has been established to provide that independent advice to Parliament on emissions projections. We provide them – on our track into our targets and what that might mean. So, advice on delivering the outcomes outlined in the Climate Change Net Zero Futures Act.

We provide these emissions projections to the Net Zero Commission for them to consider in their annual report and any further advice that they may wish to make to Parliament and to the Minister, noting their independence.

At the same time, the government has made commitments to update the Net Zero Plan and has signalled the intent to have individual sector plans to help us achieve our legislated targets. And this modelling also goes towards informing actions that may go into the updated Net Zero Plan and following that, each of the sector plans.

So, the answer really is that it feeds into two processes – that independent advisory process and role that the Net Zero Commission plays, but also the policy and program process within government under the Net Zero Plan.

MR SMITH: So, Matt, just as a follow up to Michael's question. So, how do you, how does the work that you do and the assumptions you need to make, relate to the pace of which the EPA drives industry to reduce its emissions?

MR RILEY: So, Simon, we work closely with the EPA, providing advice to them on what might be feasible abatement options. We do take a technological approach in the first instance – that's our starting point. It's the role of EPA to consider its policy and regulatory approach and how they may realise some of these technological opportunities.

But we do work closely with them – and not just with EPA. As we mentioned in the introduction, we do have a coal sector working group that comes together and provides input advice on the assumptions we use for the projections. And of course, as the information flows back out of the group as well into each of the departments, so, yes, EPA, DPHI and DPIRD NSW Resources. And then they can use that information to inform the actions that they may take under each of their sector plans.

MR SMITH: So, is there … So, you're looking at all the sectors of emissions in NSW and you're making longer term, medium and long-term forecasts about what emission reduction might be possible, in order to help the government as a whole to achieve the target. So, is there a framework by which, say for example, so within the coal sector, if mitigation and underground mines did not proceed at the speed that you had anticipated, that it might become impossible for the coal sector to play its part in achieving its share of the overall emissions reductions. Is there like a good feedback loop to make sure that that's going to happen?

MR RILEY: So, Simon, it is a matter for the government to decide how best it handles what may happen if there perhaps isn't sufficient action in a given sector. What I would say is we do provide the data and information that supports those discussions.

MR SMITH: Yes.

MR RILEY: So, the example that you gave here, and we could use it in transport, and it might be healthier to use a transport option here. If we do not achieve the targets that we've set for the electrification of the vehicle fleet, both light commercial vehicles, passenger vehicles, heavy vehicles, that means that those emissions savings will need to be achieved elsewhere.

How that translate into actions within other sectors is that open policy discussion and a matter for the government. Our role is just to ensure that we provide that data that gives the context for those discussions. What would it mean potentially for other sectors if the coal sector doesn't meet its obligations to reduce emissions.

MR SMITH: Okay. That's a bigger problem than what we're looking at.

MR CHILCOTT: Yes, that's the question, isn't it.

MR SMITH: But it's been very, very helpful for me. Colleagues, are there other questions that you wanted to ask?

MS MILLIGAN: No questions, but extremely helpful, thank you.

MR CHILCOTT: Yes, for me, as well, very, very helpful.

MR SMITH: Yes.

MR KELLAGHAN: I will just finally mention, just leading on from Matt's last point, that the Net Zero Commission, it's sort of related to the last couple of questions, the last discussion we had. The Net Zero Commission have currently got a call for evidence for their decarbonisation pathways.

So, Simon, in response to your last question, there will be that integrated pathway modelling across all sectors. So, if one sector doesn't decarbonise at the pace, what do

other sectors need to do to achieve targets. So, that work is being done at the commission at the moment, we're feeding into that process as well.

And so, it also, I guess, responds to the initial question that led to this discussion about how our work feeds into the commission, and as Matt noted, it does, but they're embarking on this piece of evidence as well themselves independently but we're feeding into that process. So, there is that feedback loop as well from this work into their work.

MR SMITH: Great. Definitely very good indeed. Okay. I don't have any other questions, so I think we can end this meeting. And we'd like to just express our gratitude for the effort you've put into to prepare to share what is a very complex area and make it quite clear to us. Thank you so much.

MR RILEY: Thank you, Simon. Thank you, Panel. Always a pleasure to come and speak to you, and always happy to take the invites to come and speak to you. We'll look forward to the detail regarding the questions that we took on notice, and also some of the other information that you may provide to us, and we'll seek to deliver back to you in a timely manner the response to those questions on notice, and also data that will help you in your assessments.

MR SMITH: Thank you very much. All right, have a nice morning.

MR KELLAGHAN: Thank you.

MR RILEY: Thank you.

>THE MEETING CONCLUDED