Heather Field:

Okay. Hello, everyone, and welcome to today's webinar, which is on making sense of carbon emissions for Victorian farmers. My name is Heather Field and I'm a climate change service development officer with Agriculture Victoria, and will be facilitating today's webinar.

Before our presenters begin, just a few housekeeping items. Our webinar is being recorded and will be made available after today. You are currently muted just to stop background noise. So, if you do have a question, please use the chat function, which is currently explained on your screen, and we'll make some time at the end of the presentation for questions. There will be a short quick survey following the webinar and it'll take just a minute to complete. So, we greatly appreciate your assistance in completing that.

Before we commence, I'd just like to acknowledge the traditional owners of the lands and water on which we are meeting, and I pay my respects to elders past, present and emerging. And I'm tuning in from Ballarat, the lands of the Wadawurrung people. And I'd like to acknowledge all the lands on which everyone is tuning in from today.

So, today we have the opportunity to hear about Agriculture Victoria's carbon and emissions tools, resources and projects that are helping support the farming communities of Victoria to make sense of carbon and emissions on farm. So, I'm very pleased to welcome our presenters today. We've got Graeme Anderson and Alison Kelly, and I'll also be sharing some of our resources as well. So, we'll be running through where to locate our emissions resources and spend a little bit of time sharing some information on some of those key resources. So, we'll look at the making cent$ of carbon booklet, which some of you might be familiar with, a fact sheet or a webpage on questions to ask before selling carbon, the Soil Carbon Snapshot, which is a great new resource, or revised resource, I should say, and a soil carbon eLearn. And then Alison will take us through a bit of an update on the Emissions Action Plan pilot project, which is currently underway, and provide some updates and what they've learned so far.

So, a little bit about our presenters. Graeme Anderson, who's got his camera on now, is an experienced science communicator and extension leader within Victoria's agriculture sector and leads a small team who deliver climate risk services such as The Break, soil moisture monitoring updates, the climate webinars, climate dog animations, and also a team who deliver on the on-farm emissions pilot, and runs a number of customised presentations for many events each year. He's got 30 years background in science and policy communication, practice change and adoption, farm planning, catchments, salinity and vegetation management, agriculture industry development, land use change and climate carbon emission issues affecting agriculture. That's great to have Graeme join us again for our webinars.

And we've also got Alison Kelly. And Alison has been working in the agriculture R&D and climate sector for over 20 years, having worked on emissions and environmental projects for Horticulture Australia, Dairy Australia, University of Melbourne, and as an independent consultant and now as our farm emissions specialist with Agriculture Victoria.

And many of you would've met me facilitating these public climate webinars, but when I'm not doing that, I lead the development and coordination of projects, products and services that help build farming community and service sector capability and capacity to manage climate change risk, adaptation, and carbon emissions actions to improve land health and farm resilience.

So, a bit about us, but now I am going to pass over to Graeme, who will kick us off, by firstly just providing a bit of context and setting the scene around this carbon and emissions space.

Graeme Anderson:

Thank you, Heather.

Heather Field:

Thanks, Graeme.

Graeme Anderson:

Thanks for the intro. And welcome, everybody. Thanks for joining us today. And Heather, there's probably a number of these carbon products you helped develop, so well, it's great to run through with an update.

So, around the traps at the moment, there's a lot of demand and people trying to understand what's going on about carbon and emissions as it relates to farms and agriculture. And so, just got simple little image here, our journey over the next couple of decades towards producing low emissions food and fibre. Ultimately, I think in the last financial year, Victorian agricultural exports were 19.6 billion, so we're a big exporter and also understanding how this issue will play out because we've got everyone globally starting to look at the emissions associated with food and fibre production.

So, from a farm sense though, what ultimately we're looking at how over time we can reduce emissions but also protect and increase carbon sink. So, this little image is just a really simple overview. On the right, yes, we do have emissions associated with agricultural production and the gases associated with methane and nitrous oxide and also the carbon emissions from fossil fuel use.

But unlike a lot of businesses, farmers and land managers have the left-hand side of the equation. So, that's where we can actually have the ability not only to store carbon and we've got existing stocks of carbon that we're trying to keep there, but also opportunities to try and add to it, whether it's via vegetation in trees or through soils.

We often get a lot of questions too because farmers produce thousands of tonnes of food and they might have a whole lot of grain that's produced on the farm, and that's got carbon in it and pasture systems grow a lot of carbon in that pasture, but a lot of that carbon is short term and it's in the system and then it's back in the atmosphere within 12 months. So, there's a lot of carbon that's going in and out of their farm systems, but essentially the carbon sinks is looking at that over time, how do we have more carbon that's there in those longer term sinks?

So, plenty of discussion around this as a topic and my next slide just goes through that, that we're seeing probably what was an issue from, I think the Kyoto agreement was back in 1990, so that's 33 years ago. What we're seeing now is decisions on emissions reduction targets are being made at global levels, at national levels, state levels, but also what's increasingly coming through the supply chain. So, our export markets are demanding it. So, you imagine that 19 billion worth of exports when our products turn up at those countries, they're wanting to know what's the emissions and carbon credentials of where it's coming from. And often people assume that, well, because it's come a long way, it's got a high carbon, but actually that's where good research and investment, we've got evidence to show that we're very efficient producers, and the hunt is on globally for low emissions, sustainable food.

So, lots of decisions are being made and that's through investments, investors, supply chains, corporate targets. So, we'll be asked about this a lot more often. So, part of today is just what we've got to help people starting on their journey.

Each sector will be required to do their bit. And also, I'd like to remind folks that it's not the job of farmers to solve this alone, not in this alone. Everyone involved in food and fibre supply chains will need to play their parts. We've all got a role in this and the key thing is to team up with others. Don't try and solve this alone. Team up with others. There's lots of great resources out there across each industry. And while today we're focused on the Ag Vic resources, there's fantastic resources there. If you look at the work that MLA has been doing with their Carbon Neutral 2030, a whole host of resources and products there, the same with Dairy Australia, and the same with all the other industries. They've got some really good resources and material there, whether it's with Sustainable Wine Australia. So, there's lots of good help there and people trying to get their heads around this issue.

The key thing from a farming point of view is adopting solutions when they make sense to do so on your farm. So, there's some valuable learning coming already out of the on-farm emissions pilot that Alison will share with us later. But I guess, a key thing is yep, there's a lot of innovation in the pipeline and a lot of things you might hear about and quite a lot of them aren't ready to adopt yet. But all we have to do is as those things become available and make sense, then we can adopt them on farm. So, that's a challenge for the decade or two ahead. And thanks, Heather, I'll try the next slide. Over to you, Heather.

Heather Field:

Yes. Thanks, Graeme. It is over to me. Yeah, so I just wanted to, firstly before we jump into some of our key products and resources is just to share where to locate these on our Agriculture Victoria website. And I'll pop the link in the chat shortly. But all our climate and weather and carbon and emissions resources can be found at this particular website here or by just typing in the Agriculture Victoria website and clicking on the climate and weather pages. And within that, you'll find a page called Understanding Carbon and Emissions, and that's where we've located most of our tools and resources and links off to our projects that we're currently working on in this carbon and emissions space.

So, here you'll find the making cent$ of carbon booklet, the Soil Carbon Snapshot, which gives the latest on soil carbon via some key references, which Graeme will go into shortly. The questions to ask paper that we've got, and also some of our eLearn products along with a link off to our On-Farm Emissions Action Plan pilot, where we'll start to populate some of our learnings from that pilot. And there's also some frequently asked questions there.

And also, as you know, we have our climate public webinars such as what we're delivering today. So, all our recordings that link to carbon and emissions or climate risk in general can be found here. And we're always working towards popping up more webinars and the recordings of those. So, welcome to come back at any time to view those. So, I'll pop that link into the chat shortly.

The first one we just wanted to run people through is the making cent$ of carbon and emissions on-farm booklet. So, this one's been around for many years and we updated it a few years ago, just to make sure that it was current and had the most up-to-date best practice within it. So, this has been quite well received by farmers and we've got this online on our website, but also it's available in hard copy form. So, if anyone would like copies, just get in touch with me and I can arrange those to be sent out to you.

So, the booklet aims to introduce management options to lower farm emissions that may also reduce operational costs and improve profits along the way. And it explains this via, I suppose, five key action areas which we've got explained there on the screen. From energy, livestock, nitrogen, and then soils and trees. And you can see here just an example of what that looks like. So, it explains some of the management options around those five action areas. And then a bit of a tick box system where people can go in and tick some of those management options that are relevant to them.

And just in a little bit more detail there, the five action areas. So, it looks through energy and reducing fossil fuels on farm. So, via improved efficiencies and installing renewables, for example. And that's a fast-moving space. Livestock emissions. So, as we know, most of those come from ruminants and the key focus areas are on highly productive systems. So, looking at reducing animal turnoff times, reducing more product faster, new developments around emissions, reducing feed additives, et cetera.

And then our nitrogen section and nitrous oxide emissions. So, looking at those, the four R's, the right rate, right time, right product, right place. So, going through those as key management practices. And then we've got our healthy soils and trees, which Graeme will talk about a little bit more when we get to some of our other products.

So yeah, please let me know if you'd like copies of this or you can access it via our website and I'll pop that in the chat shortly. Our next one is about the key questions to ask before selling carbon. So, I'll hand back to Graeme for this one.

Graeme Anderson:

Thank you. Yeah, so we do get asked a lot about carbon and carbon credits and all of that. And so, we have got just a bit of a fact sheet of questions that farmers should ask. I guess one of the things that most of the carbon that's being talked about relates to carbon sequestration. So, sequestration, the definition of that is safely stored for the long-term, for safekeeping. Sequestration. So, it's been taken out of the atmosphere and put into a longer term safe storage site.

So, carbon in trees, as we know, has lots of on-farm benefits. We've got lots of people that have been planting trees for many decades and all of the Landcare work and farm management improved soils, lots of production benefits, makes farms look and actually produce better. But also, there's more recently been the discussion about, well, can some of that be packaged up into an official carbon project working with the Clean Energy Regulator and look at things like carbon credits?

I guess a key thing just in terms of starting all of this is that if you do set up a project, if you're going from a low base of carbon to adding carbon over time, you can increase carbon and if you've got a registered project you can accumulate carbon credits while that carbon's being absorbed. But a key thing that's really important to note with sequestration projects is that as trees grow or as your soil goes from a lower carbon base to a higher, they eventually hit a maximum amount. So, if you're relying on that as an income stream, you have it there for a while, but it's not an enduring income stream such as if you are selling ongoing supply of low emissions food and fibre. So, it's just a key one example of some of the issues that we're just trying to make sure farmers, as they're making those choices of what to do, understand the longer term of that.

So my next slide, Heather, I think talks to a bit of an example of that and with some of our farms that have planted a lot of trees through Landcare area, they've noticed that when they look at the annual sequestration of those trees, it changes over time. So, here's some work that has been done by University of Melbourne through a Trees on Farms project funded through MLA and the government and other partners. So, Rachelle Mayer and Hugh Stewart doing some great work.

But the blue line there just shows an example of if for 20 hectares of tree growing, you did that in one year. And along the bottom there, you can see this is a number of years out over ... It's up to 46 years' time. You can see if you're just looking at the annual sequestration rate of that 20 hectares of planting, which is the blue line, you can see that it reaches a bit of a maximum from years about six to 10, and then declines over time. So, that forest is still accumulating more carbon, but its annual rate will slow over time.

And so, when a lot of farmers are looking at this and trying to work out if they can get carbon sequestration projects to use as insets against their own farm emissions, this is an important consideration to take, because it just means you can plant trees, they're great, lots of on-farm benefits and shelter, but essentially what they do is they'll provide a gain for us, but it's not an enduring solution. It buys us time to really get onto those solutions that reduce emissions from their source. So, that's just some examples. There's a lot more to understand about that space.

So, on the next slide, Heather, that's where we talk about some of those questions that people should think about if they're looking at a carbon sequestration project and signing up for registering that, because of the carbon obligation is with the land. So, it's either to do with carbon in the soil or carbon in those trees you planted. And an offsite interest has a bit of an interest there and there's obligations on the owners. So, that's what that webpage there is just running through some of the questions that people have been involved in projects, said the sort of thing you should think about longer term.

We have a lot of farmers that are very happy to accumulate carbon on their farms and because they get the shelter and all of the other benefits and more productive soils and they're happy with that. So, that's good. So, always just check before you sell some of that carbon to others.

What's the next one? Oh, well, the Soil Carbon Snapshot. Heather, I'll rock into that one. So, it's great to see all of the interest in soil carbon. There's been a lot of research done over the last 50 years in this space. So, the Soil Carbon Snapshot was really put together to look at those research papers, the longer term research trials, there's about 70, I think, references linked in that document. So, we've put them all into about a 26, 27-page booklet. So, it's got live links, it's able to be downloaded free from the website. There's live links to source papers and studies there. So, it's just a useful quick snapshot if you're trying to get your head around what's all of the science that's happened before us, to help put it all in perspective.

The next slide just gives you an idea of some of the contents page, but if you only read one page, I'd send you to the page which has the 10 key considerations for soil carbon, because it really is the key messages that comes out from all of that body of work, and hopefully some good links in there that then take you off where you can investigate different particular land use changes or various studies and read the papers and understand that body of knowledge and where it's got to today.

But I think after that, Heather, I think you've taken those 10 key considerations and you've turned them into something that's a bit easier to understand.

Heather Field:

Yes, certainly have tried to do that with this new product. It's only been out for about 12 months now, which is an eLearn, an online eLearn, which is easily accessible via our website. And it's a bit of an introduction to soil carbon and it provides just an introduction to those looking to better understand soil carbon, its role and function in agriculture.

So, we all know that soil carbon's critical for soil health and productivity and profitability and resilience. So, we've tried to just package that into a bit of a soil carbon 101-type eLearn for those who are wanting to get that basic information. So, really worth sharing with farming groups if they're starting out on that journey.

So, it covers off on five key areas in the eLearn, which are just shown there on the screen. So, the soil health benefits of soil carbon, the differences between soil carbon and soil organic matter, the influence of soil type, climate and land management on soil carbon stocks, which is quite an important one, and the impacts of agricultural practices on soil carbon. And then we've got a section where to go for further information. So, I'll pop the link in to the chat for this one shortly, but do encourage you to have a bit of a look through. If you go from start to finish, it's probably a half hour eLearn, but you can certainly jump around and have a good look at some of the sections that you are interested in. And always open to feedback and ways to improve some of these products. So, please send that through as well.

So, with that, that's some of our Ag Vic products, but now we are going to have a look at one of the projects that we've got on the go at the moment, which is the On-Farm Emissions Action Plan pilot. And we've got Alison who's going to run through that project and give us a little bit of an update and some of the key learnings. Over to you, Alison.

Alison Kelly:

Thanks, Heather. So, it'd be really great to just get a chance to touch base about this project, which is one of the pieces of work under the Agriculture Sector Pledge, funded by the state government with the intent to be able to support 250 farmers across Victoria across commodity groups, for them to be able to look at emissions reduction opportunities for themselves, access a grant to be able to action something on farm. But the idea behind this and underpinning all of this is around testing approaches to building awareness around this opportunity around emissions and carbon on farm.

So, next slide, Heather, goes into a little bit more detail about where we're up to for this project. It has been running for about a year and a half now in terms of its delivery with participants. And got a produce map on the right-hand side of the slide here that gives you an indication of who we're actually targeting in the first couple of rounds of this project.

So, we have been actually working with a number of different sectors, starting with the livestock sectors with beef, dairy and sheep producers and moving into some of the cropping and more intensive sectors as we've been going through the project. And so far, we've been able to sign up 174 of the 250 farms and those are the ones represented on the map. And we've already been able to have farm visits with 116 of those participants so far and have able to put them through with an action plan developed by the Ag Vic staff for our colleagues so far. So far we've already got about 77 plans that have been out to those participants. So, we're progressing quite well through the numbers that we are trying to get in terms of cross sector of industries, cross sector of those with different starting points on their emissions and carbon knowledge and understanding. And I guess the idea is to continue to work with the remaining participants over the next year and a bit.

We've been lucky enough that we've also had the opportunity to commission a number of service providers to work alongside us at Ag Vic, so about another 20 colleagues and advisors from those five companies, as well as training up additional Agriculture Victoria staff from across other departments. And they've been able to undergo training in this process for delivery of this one-on-one offering of action planning with farmers.

And so yeah, we've been able to develop a number of resources that are supporting and underpinning the project around facilitation guides, templates and tools for each of those individual industries. And we're in the process of updating the website that Heather's provided some links and access to and the idea that we're trying to share as much as we go, and part of the reason for this talk today. We also have the opportunity for anyone to join our community of practice where we host additional events and webinars around on-farm emissions advice specifically.

So, next slide, Heather. Oh and yeah, a little plug for the final call for participants will be open in March, so we'll get through a bit more details for that at the end of the slides. So, what do participants receive from us when we're going through the pilot process with them? We go through a process around knowing your number, understanding your number, and acting on your number. And what that involves is actually each of the individual participants are asked to provide us with some of their on-farm records that relate to emissions information. So, we do have a pro forma that we send out to participants, that collects their data and then we use that to be able to populate an emissions tool for them and generate an emissions profile for them.

So, individual participants don't need to access the calculators themselves. We do that process, but we take that preliminary assessment out on farm with us when we go on the visit, we get to run through those numbers with them, we get to ask further questions to clarify any missing data. Also to clarify the context of the farm as well, which is quite important when we think about any farms that might be transitioning in terms of their system or expanding and growing, so we can get a really true picture of what their mission scope and boundaries can be.

We run through an action planning process with them as well. So, that is something I'll touch on in a couple of slide's time as well, how we do that. And we go away and then write them a tailored action plan for them. That action plan is actually their access into the grants application. That's part of the pilot participation as well. The next slide.

So, what are we hearing so far with those visits that we've conducted and also presentations like this that we've been giving to groups as well as we are going around, is that this one-on-one approach that we've developed has been fairly well received. I feel like that there is a really two-way communication process that we're able to offer here and we're getting really positive results as a result of that.

So, one of the reasons for that is that we are starting at different starting points for each of the participants, whether participants have already done an emissions profile or maybe they're just unsure about where to act, all the way through to someone who hasn't started the process at all. And so, this one-on-one process gives us a chance to be able to work with them individually and make sure that they can answer any questions as they're going through.

We are finding that what this brings up, quite often, is quite a lot of the feedback around the emotional side of this, which is that sometimes this space can feel really confusing. It can feel overwhelming when they're seeing more and more drivers coming through from supply chains or industries or government targets and things that are changing. And it's just being a little bit unclear on what it is that they actually can do tailored to their business.

There is a bit of concern that we are hearing as well through our one-on-one participants is that there seems to be a bit of a disconnect between looking at something like becoming carbon neutral and the opportunities for certain systems to be able to get to that point right now without the purchasing of offsets. And so, that disconnect and that feeling of, well, actually if someone's doing that over there, how are they doing that? That's not entirely clear and we're trying to obviously provide a bit of clarity around the evidence around what they can do now.

And I guess the final quote that I've got there in the orange coloured there is that there's a real concern that there's that solution gap looming. So, there's a feeling that this task is impossible and that final comment there, we have no hope of becoming carbon neutral at this rate. So, we are seeing that these one-on-one sessions, there are a couple of hours invested time sitting down with these participants to talk through those to give them some of the solutions that they can do now and work through that with them. Next slide.

And Heather, I might get you to just click a couple through. Yeah, thanks. So, one of the things that we use when we go out on farm around knowing your number is to talk to them about their emissions profile and to actually make sense of all of this at the farm scale. A number of the things you can see in that infographic there relate to how these emissions numbers relate to national or international carbon accounting rules. And so, you've got scope 1 and 2 emissions, those that happen on farm, both those that are sources of emissions and could potentially be sinks or new sequestration that we're seeing and the indirect scope 3 emissions. And so, those being purchases that are brought into the farm and how those contribute to a net footprint.

And we start there, we start with thinking about where are all of these sources on each individual participant's farm, what are their hotspots, where are those major sources of emissions for them? How much are trees actually supporting them in terms of their net number? And then, we do talk about scope 3 even though we note that they are around purchasing decisions and can be quite a significant number for some of those businesses which have a farming system that might be on trading livestock, for example.

So, we talk about some of the tips around understanding why you want to know this number, what does your market need to know? Are they already asking you for a number? Is it a total number? Is it perhaps even looking at an emissions' intensity number? And making sure that how we utilise the tools is also appropriate for what they need. So, we're utilising the University of Melbourne Greenhouse Gas Accounting Framework tools, but we know there are other approaches and more user-friendly options like the online tools that are becoming more and more available. We just want people to understand what data each of those tools are asking for, making sure that they actually have the appropriate data and records and where they could go for more advice if they need that too. Next slide, Heather.

Oh, and always cover off on any of our one-on-one visits with making sure that this is really around providing an estimate for them for their emissions. We are not coming out there to measure at point source. These tools allow them to estimate emissions on farm and they're always going to be generally right but specifically wrong. And allowing for that consideration is something that we talk through as well, as part of the visit.

So, when we talk about records and farm data, this is one that we end up spending quite a bit of our time with participants with. So, as I said, we actually ask for farm data before we even turn up. But what we are finding, even through that process when we've simplified what is required for the Greenhouse Gas Accounting Framework tools, we are still finding there are going to be gaps or there's going to be misinterpretation of what's required. And it's something that we actually work through when we go on farm and make sure we spend a bit of time to get as accurate as we can.

On the left, we've just got a bit of an outline of the types of records that we're talking about. So, different industries will have different requirements for data for each of the tools, but for livestock, its livestock numbers, live weights and those sorts of things. And then for other sectors, we're talking more around the inputs, energy. We also talk about trees and soils, but noting that the tools that we're using, which are those University of Melbourne Greenhouse Gas Accounting Framework tools and the Australian Dairy Carbon Calculator, which is hosted on the Dairy Australia website, they actually don't do an assessment for soils.

So, we do actually ask them a bit about their practice and whether they're soil testing and where they want to go with that, but noting that it's a limitation of the tools we're currently using to estimate their emissions, that we're not doing that as part of this. But we do offer also a comparison and we take out with us a number of the different benchmarks that are available, whether those be a national benchmark or if we have regional benchmarks available for livestock through the Livestock Farm Monitor Project and for dairy through the Dairy Farm Monitor Project. And of course through our project as well, we're starting to collect more information about what we're seeing in terms of different farming systems. And we are able to offer that back as part of our information, but those are also freely available benchmarks and we can make those available online as well.

Next slide. So, one of the key things that we are finding when we are going out and actually then talking about how we actually look at things that are possible on farm to do now, many of those actually tie back to efficiencies. We know greenhouse gases are actually a loss from the system somewhere along one of those point sources that we've mentioned there. And so, when we talk about the levers, what is possible, how do we actually look at reducing emissions, one of the first things we talk about is the 1 to 2-percenters. Those do nows where it might be actually even as simple as collecting data. So, if you're already missing data and we are using default values, the value of them actually collecting that data into the future so they can get a more accurate emissions assessment. Or, looking at those that have only been able to provide us with spend on electricity and fuel use, how again over time it might be more useful for them to be able to get usage figures rather than the spend figures.

So, those are the types of really simple starting points we end up talking about. The others, I think they've been touched on a little bit by Graeme and Heather and it does come out through the making cent$ of carbon booklet, but there's key areas as well where these efficiencies come out around livestock and herd efficiencies, feed efficiencies, and for those that aren't livestock farming systems, which we are getting into now, input use, purchases, looking at precision application. And then for the dairy industry, we've also got opportunity that we've been talking about around further effluent management.

So, the keys are really back to those basics, getting back to efficiencies and making sure we're clear about those. Noting any limitations to the tools and that it's really difficult for us to give them an exact number of what each of these practices might do to their emissions profile, but that actually we can work with them in being able to describe what some of those benefits and co-benefits might be from any of the actions we described.

And also, that this quantification of carbon sequestration will actually be a challenge for many participants, may not be able to measure or might not have information to be able to measure a baseline. So, at the moment, the model tools are what's best available for them at this point in time. But explaining that over time some of the frameworks for measuring trees and soil sequestration might change and to keep that in mind. Next slide.

So again, while we're out one-on-one we actually have different industries we're starting to put together worksheets. So, farmer worksheets that we actually go through, through our one-on-one session. And this is just a little snapshot of one of the draught versions that we've taken out on farm just to test as part of our pilot. It is talking about those efficiencies and it is about then working with each of the participants for them to do a bit of a self-rating on some key levers, as we call them, for reducing emissions. And you'll see a number of those I've already touched on in the prior slide.

But going through this, each one, putting a tick on where we are in terms of efficiencies is actually a really useful process for them to be able to convert that into an action. So, if we're talking about reproductive efficiency, and we do think that there's some more gains to be had in terms of hitting targets and at the right time, we might actually then describe that in the action plan template that we've got on the right-hand slide, which is around methane. So, how does reproductive health improve methane? How is it a 1 to 2% gain that might be possible? And then we actually track that through, through methane, nitrous oxide, carbon dioxide, all the sources of emissions and then opportunities for them to further inset and have any reductions through carbon sequestration.

These templates are a bit work in progress at the moment, but again, happy to share those as we are going through. And the feedback so far has actually been that this is a useful process, that it is actually really useful to go through this line by line, like what can we do? What are we already doing now? And what is that recognition for what we're already doing now? But what could we do in putting that into an action plan for them as well? Next slide.

We also talk about a bit of a hierarchy of actions. So, instead of just honing in on really big ticket items, we do talk about some of the things around feed additives and those sorts of things. But again as I said, starting with efficiencies, how can we improve both any efficiencies in individual actions but overall emissions' intensity as well? So, whether or not that is around considering the farming approach any efficiency gains and whether or not that's collecting better data and more production data that can support that. Tracking through to reducing any absolute emissions. So, whether there might be things around reducing input use, looking at renewables or those additives, as I mentioned.

We're talking terminology around both insetting rather than potentially looking at offsets at this point in time. But the idea around the role of trees on farm, the role of soil and the carbon stocks that they might want to either measure or improve over time. And as I said, the latter being any of those schemes looking at offsetting or purchasing of offsets.

And the final is actually also about protecting what's already on the farm. So, looking after those existing stocks of carbon, talking through any challenges that might be faced through seasonal conditions, whether that could actually influence carbon and short-term fluxes of stocks of carbon on the farm. And whether or not there's opportunities for further maintenance of soil carbon stocks through ground cover or other practices that might be there too. So, we talk about that as the overall pathway and what's possible. And within the action plan we obviously go into a little bit more detail with each of those actions as we go. Next slide.

So, this slide is actually a bit of a snapshot of some of the examples of what participants have actually gone through once they've received their action plan and they're willing to actually act on one of those actions we've described. There is the opportunity for them to take up a grant which is $16,000 one-to-one for a project that can actually be undertaken within a 12-month period of time. So, these are examples of what participants have already been applying for through this pilot project.

It is a preliminary list and it probably will be livestock-focused, given we were hitting those rounds early on in the project and so therefore, they're most advanced through the whole entire project itself. But you can see these are around some of those things that have already been raised already around herd and breeding improvements, whether or not those feeding systems already are set up and geared towards being feed additive ready, looking at more efficient fertiliser application to be able to reduce nitrous oxide.

We mentioned effluent. So, obviously within the dairy systems, effluent is often the second-highest source of emissions and so effluent management comes into play. And then the others relate to things like input use or managing the farm system itself. So, whether that's through fencing off wetlands, looking at paddock sizes, planting of shelterbelts, and also soil benchmarking and monitoring.

We're hoping to actually expand this list as the project goes long and make it available as we go. And as I said, just a disclaimer, this is just a really short list and from a really small data set so far of the project. But yeah, we're hoping to also turn these into some more case studies and I think we've got some examples of that, Heather, on the next slide, we've actually already been working with pilot participants to tell a bit of that story about what they've undertaken on farm, whether that be through video content. We've got one of our first pilot participants, Julian Carroll, having done a video, and that is online that you can access about what he's done through the grants process.

We've had some of our participants be willing and open to host field days, where we've come along as well and in tandem been able to talk about their practice or something of interest to them, whether that's soils or energy and other components of that. And I guess the idea is again, as this project moves through, we are more than willing to keep talking and link through with other activities that are happening through other programs, to make sure we're communicating the same things out as we go. Next slide.

And then the other is we've touched on a number of templates and resources so far. We are still in development with a number of those, but we will actually make those available on the website as they become more available. This is an example of one of the pieces of a little brochure flyer that we put together for a conference around know, understand and act on your number. Just really high level but a starting point to get people engaged in the topic as well. So yeah, if that's of interest, we can share those offline as well. And I think that was it. Yeah. Back over to Graeme for the next bit.

Graeme Anderson:

Thank you, Alison, a flying tour of all that's happening there and we really thank all those farmers who are participating in the on-farm emissions pilot and the web link's been popped in there. There's a lot of FAQs there and also around opening up in March for the final 75 participants. So, lots learning, which we'll be sharing lots more of those products with everyone over the next 12 months.

There's other programs that are available. So, also the Victorian government has the Victorian Carbon Farming Program and we've got the link there which is looking at options for farm forestry and shelter plantations that have a carbon component in them. There's also the Victorian Bushbank Program, which is vegetation and habitat restoration for carbon and biodiversity grants and a contact there. And then there's also in Gippsland, some different initiatives underway around farm forestry through VicForests. And of course, amazing work happening out there through each of the catchment management authorities and all of the Landcare groups out there with various grants.

So, quite a few sources there. Hope it's not too overwhelming with all those links there, Heather, but we just thought that the purpose of today was to share some of that. And thanks everyone too for some of the great questions that are rocking in. Heather, did you want me to start with a couple of them?

Heather Field:

Yes, very happy for you to kick off. Great questions coming in.

Graeme Anderson:

Yeah. There are some rippers. So, just going back in, in chronological order. So, Tony, good day, Tony, great to see you there asking about biochar. So, biochar, as you know, it's a pyrolysis process where biomass such as wood or straw or olive pips can be burned in a biochar plant. Provides energy, but it essentially turns a shorter term form of carbon that's in the biomass into a longer term form of carbon.

So, when you're looking at the atmosphere effect of biochar, it's actually at the biochar plant that is actually doing a pretty significant job. And if there was a carbon credit project, usually that's the point of where that gain would be captured, because they're taking a short term form of carbon and turning it into a longer term form.

The second part of the equation is then how that biochar might be used. And there's been a lot of trials and different things happening globally just about how can that biochar be used and where can it have some either agronomic benefits, soil health benefit or feedings type benefits? So, I think each of those is a lot of questions still to be asked because my limited understanding of biochar is, well, all biochars vary a lot depending on how much they're charred in the pyrolysis process, but also what was the actual nature of the material?

So, it's quite specific, but I think longer term there are certainly opportunities there and farms have a lot of biomass that's grown on site. And the opportunity for some of that to be taken out of the short lifetime carbon pool and put into a longer term carbon pool is essentially at the heart of where some people get quite excited about the potential role biochar could play in future. So, that's a quick one of that one.

I know Dan asked about orchards and is anyone making money out of carbon credits as part of their fruit orchards? And no, Dan, no one is. One of the key bits about the carbon credits and registering a project with the Clean Energy Regulator is the project has to be additional to what was already going to happen. So, for a orchard establishment, obviously the core reason of that is for the fruit or nut production. So, it's the key thing.

So, while for a productive orchard you may not be able to claim carbon credits, it's a very different thing to say, "You know what, if you establish an orchard, you have actually taken carbon out of the atmosphere as those orchard trees grow." And so, when you are selling the product and the fruit or the nuts from it, you've actually got a pretty good story in terms of a carbon footprint story to say about, "Here's what low emissions food looks like." So, it's not all about carbon credits. And increasingly, a lot will be about how we can tell our carbon story and the benefits of things that we're doing on farms, how that flows through to the end consumer, so they can understand the emissions associated with the production of any food.

Matt makes the question about agroforestry and it's got a really big one because while planting a new forest on cleared land does accumulate carbon over time, one of the terrific opportunities is that as that forest grows, if it's well managed, some of that carbon can be taken as wood and put out into buildings and material. And so, it's actually got a commercial value as well as having that carbon still out of the atmosphere and that also allows you then to regrow. So, there's quite a good story if you think about some farmers, if you had 100 years and you had a 25-year rotation, you could take four crops of carbon out of the atmosphere and put it into wood products.

And as Alison and Heather would know, I'm often showing this straw panel, which I don't know if you can see very well, this is straw from farms near Bendigo that get made into panel. And it's just the same as that that straw was grown in the crop, but when it's put into a building product like that straw panel, then that carbon is kept out of the atmosphere for perhaps 50 or 70 years, depending on how long the product is.

So, I think down the track, if across society we're valuing carbon, people will get a better appreciation of what's been associated with the production of that product. Is it producing emissions? Or, in some cases when with farmers we can be producing things that actually are taking carbon out of the atmosphere and providing a product that society needs. And you can keep doing it, which is where it's an ongoing revenue stream or income stream rather than some of those other options.

So, I'm running through them, I'm nearly running out of ones there. I think there was a good question there around can farmers collect credits and carry them forward? Well, I think there's different ... Probably need to get good advice there on that one about if you're looking at carbon credits and carrying them forward. I think that is, you have to register a project, but I also think there is some limitations about how long you can carry forward some credits, but it depends on the type of project and sequestration ones, I don't think you can get a lot of credits there and then bank them forever. I think that's something you really need to go and clarify before you kick off on your project. Alison, is there you'd like to have a crack at working through? There was a good one from-

Alison Kelly:

Yeah.

Graeme Anderson:

Sorry, go.

Alison Kelly:

Yeah, there was one around the accuracy and reliability of tools. So, it was just specifically around there are being potential errors in assessing emissions reduction and how we can actually overcome them. I guess, the key thing as we said within the presentation is that there are resources available, there are tools available. We've chosen to utilise the University of Melbourne Greenhouse Gas Accounting Framework tools, or the Australian Dairy Carbon Calculator.

When we've actually then gone and asked industry which are the industry agreed tools and which ones are most appropriate and will be existing into the future, so that they could be available for year-on-year analysis. Those were the ones that we were led towards and we actually did do analysis before the project to have a look at all different tools and what's the pros and cons.

But I guess the key point here is that we are using tools that have been developed to be aligned to national and international accounting rules and that's why we've gone with those. But also, we've used Excel-based tools, those that are downloadable, so we can actually own them and host them in our files. So, we can keep an offline version, we can see version control, we can make sure that we're talking about really a lot of detail when we're out with farms because we can go under the hood, go into the back end of those tools and actually work out what's happening there.

It doesn't mean that they're going to be always accurate, because they are an estimate. We are not going out to measure at farm and that's really at this point in time, potentially a costly exercise to do. May change into the future. I know there's a bit of work trying to do ... Working to try to make some of that measurement more reliable, maybe a bit more remote sensing or cheaper over time. But we're trying to use the best scientifically backed tools that we can at this point in time and just being as transparent as possible of the data that we put in, which version of the tool we've used and keep a version of it so that if we ever need to look at it another time, that's why we do that.

We are going to have to do that at this point in time because on the flip side, supply chain and markets are using those tools as well. They're using the best available they can get access to and they're not as worried about that accuracy issue. They're just factoring that into what they're doing. They're just hoping that they will become more and more accurate over time as well. And we really are just in a bit of a living experiment with all that at this point in time.

Graeme Anderson:

Yeah. Thanks, Alison. Also, there's another one there around farm dams. Lizette. Good day, Lizette, really good question. And farm dams do get a mention in the action plans and there is some good blue carbon work happening around that. And just farm dams at the poor end of the scale can be a net emitter and at the great end of the scale can be a net sequester of carbon. So, there's a bit of research around that, the good filter zones around farm dams, that the higher the quality of the water, the cleaner it is, the more dissolved oxygen, there's less actual methane emissions that come from those dams.

Yeah. And it's interesting, as with a lot of these solutions on farm, they have a bit of an emissions benefit, not huge, but they're all lots of 1-percenters, they all help, but also they're things that most farmers look at and say, "That's what we associate with good land management. So actually, it's improving animal health and welfare because we've got better quality water. But also, it's nice to know there's some research there saying we can reduce some of the emissions associated with materials in dams." So, that's a pretty good one.

I think there's a good question there, Graham. Good day, Graham, about potential of Asparagopsis and 3-NOP and some of those feed additives. So, what we'll probably have is a future webinar, which we'll focus on a bit of that and some of those [inaudible 00:58:29]. Dr. Joe Jacobs is leading research on that down at Ellinbank and there's quite a body of work that's happening there around that space.

So, I guess one of the good things from a farm point of view, there's some promising options coming down the track for certain parts of this. They're just not there ready to be adopted on farms yet. But part of the whole challenge in front of us in agriculture is we're needing that innovation supply chain to be coming so that in five years' time farmers do have options off the shelf there that they can then apply. And we do talk about that in most of those farm emissions action plans too, Alison. So, that's pretty good.

There's some great suggestions of things coming in, cool roof technology, so energy is a really key one, and efficiency again, all of those things, they all help. Over to you, Alison, Heather, any other ones there want to pick out?

Alison Kelly:

Yeah. There was a question just around if talking to a farmer, where's the best place to start to maintain their interest and not to put them off? It's a really good question and like I said, through our one-on-one session, we are finding that sometimes the conversations end up being uncomfortable or difficult and that's just a given. It's about, I guess for us, we've got a one-on-one offering. So we get the chance to see them face-to-face and actually have it as a two-way conversation. And I think it does depend on their starting point of where they would like to go before you actually kick them off into a really detailed conversation about their emissions number, if they're just really unsure where to start as well.

And we do ask the question around whether or not they've been asked for their emissions number already, or whether or not they're just overall interested in the topic, or is there something from their point of view they want to know about. So, quite often, just to break the ice at the start of a one-on-one session, we ask those questions and quite often it might be, "Oh, I saw a Landline talking about Asparagopsis, so what's that going to do for me?" Now, that's the very first question sometimes, and it's interesting because we haven't even got to numbers, we haven't talked about their data, haven't gone into anything else. And so, I think it is about understanding what they want to know, being able to respond to them. And if you don't know, know where you can send them off to.

But I guess the key point we try and get across to, that know, understand and act. At the moment we're hearing more and more that people are being asked for their number. So, know your number. Where you can get some advice to understand what that number means for you. So, what those levers are. The acting on, it could even be that you just collect better records and be really clear on that number if and when asked, because we are seeing that becoming more and more of a driver at this point in time.

Graeme Anderson:

Yeah, that's right. No, there's some great questions coming in. Alison, there are carbon-neutral farms out there, so I do know that that issue of those that have done a lot of Landcare plantings and have lots of trees and might've been carbon neutral for a period of time, so it's a key penny drop for all of us that the trees help negate, but they don't offer an ongoing solution. But what the left and right-hand combo is if we've got sequestration and Landcare planting some trees and healthy soils accumulating some extra carbon, that helps reduce net farm emissions. But also over time, if there's more innovations coming through the pipeline that actually reduce emissions from source, then by each decade we'll have really improved that journey to low emissions food and fibre.

And I know one of the things in terms of being asked about markets and exporters, what will happen in the future, it's a bit hard to know. The world's always going to need food and fibre, but there are choices being made already around this sort of topic. And I guess, part of the next decade is getting ready to be asked more often.

And what a lot of questions from shareholders and investors and others to-date are not necessarily asking us to be carbon neutral, but they're asking us to say, "What's your plan? Do you know your existing emissions? And have you got a path there for the next few decades about what you're doing to actually show you're working towards those longer term net-zero targets?"

And so, there's two choices there. If we've got the plan and we can say, "Yep, we're doing that and we think there's 5-percenters here and 10-percenters here and there's more innovation coming." That's all good. That's all that's been expected of us. We could also say, "No, we're not interested." And then there's quite likely still be some markets there, but how that plays out longer term, there's just probably higher risks of that approach, given how much we rely on export gateways.

And I think there'll be future webinars on that, Heather, really for the next couple of years, we've got plenty to do, plenty to share in this space. And getting Joe to come and speak at one of these would be great. Just on the farm dam one, I forgot to mention, the Sustainable Farms work. There's some good stuff there. They've just got a new booklet on sustainable farms, as well as they've got a really good one on biodiversity and shelterbelts and things. So, they're the sort of things that we link to in the action plan.

And so, sometimes it's overwhelming. Then there are lots of just sensible things that farms can do. But also, as Alison said, sometimes it's reassuring for farmers saying, "Well, I'm already doing that, I'm doing that, I'm doing that." And they're saying, "Okay, that's good. I've got good genetics. I'm maximising what we can grow and being efficient with that, which is at the heart of the business." So hopefully, like I said, team up with others and we'll get there bit by bit.

Heather Field:

Thanks Graeme and Alison. Yes, thank you everyone for those great questions. We haven't been able to get to all of them, but we have covered off on most of the themes that have been coming through. But we'll take a closer look after the webinar and they help us work out what questions are being asked and where some of the gaps are in people's knowledge and information. So, that's always valuable for us to use for our presentations and products going forward. So, we'll take a look at those.

So, we have hit time and we have had a large group online today, so over 160 people tuning in. So, there's certainly a lot of interest in our topic today. And so, we'll keep that in mind for future webinars and going forward. So, I will close out the webinar there and do encourage you when you do leave just to complete that survey and if you've got any other comments and questions, pop them into the survey as well. And on the screen there, you can see our contact details if you'd like to get in touch for anything specific.

So, thank you, everyone, for joining and we'll make sure that you all get access to the recording if you want to follow up again and also access to all of those links that we shared today, they'll be in an email to you in the coming days. Thanks, Alison. Thanks, Graeme. Great to have you both able to join today to share all your great insights.

Graeme Anderson:

Yeah. Thanks, Heather, and thanks everyone for joining. And I know there's a lot of people joined today who are active in sharing the good oil with farmers and stuff out there, so thanks, everyone. Looking forward to teaming up.

Heather Field:

Wonderful.

Alison Kelly:

Thanks.

Heather Field:

Thanks, everyone. Have a good afternoon.