

WEBVTT

00:03:14.000 --> 00:03:42.000 We do have options of, Maybe we have almost 100 people. As a, Good. It gives me the drink on and it's Dr.

00:03:42.000 --> 00:03:49.000 Lee is a professor at the first owner's institute for global house. No, it's global.

00:03:49.000 --> 00:03:56.000 Is a environmental epist. Focusing on the house, the evolution from traffic and how to.

00:03:56.000 --> 00:04:04.000 The research has investigated explorer patterns. In low but also, made a by high income countries.

00:04:04.000 --> 00:04:15.000 And the house could benefits or conscience, medication via, So she is the co-director of the LASIK Ponda on Health at BANG in Europe and and, and, on medications.

00:04:15.000 --> 00:04:24.000 And she's also a member of the WHO's technical, otherwise, it, from, the, health, focusing on the climate change airport and the house.

00:04:24.000 --> 00:04:37.000 She also did many many, many products. One of them is the European Research Council's, Caravaggio, health effects, air pollution in, and then also calling.

00:04:37.000 --> 00:04:56.000 5 year European Horizon project called a panelized focus on climate change and house. She has minimum, many of us as well, but I want to mention today, well, I'm going to mention today to only Michael Michael Award by the International Society for, the, Michaela, Award by the International Society for, to, EVEN, body.

00:04:56.000 --> 00:05:04.000 Those who might not know Tony, Michael, is the pioneer at the Lord who links a climate change and public health.

00:05:04.000 --> 00:05:21.000 So. With our first day, it's all well, thank you so much, Kai and the center for the to be here.

00:05:21.000 --> 00:05:28.000 It's really a pleasure. And.

00:05:28.000 --> 00:05:35.000 Okay. So, what I'd like to do today, just very briefly is give you a little bit.

00:05:35.000 --> 00:05:49.000 Related to, climate change mitigation goals and then some of the details of how we conceptualize and quantify the HOPO benefits of climate change mitigation.

00:05:49.000 --> 00:06:07.000 I'll also mention a little bit about the when to countdown for climate. Just I mentioned, I'm involved in and then hopefully we'll have time for a very short exercise to get to thinking and stimulating discussion related to the health event.

00:06:07.000 --> 00:06:22.000 So it was to say climate change is an incredibly complex. It's a safe, stable climate is a vital public good, that requires global governance.

00:06:22.000 --> 00:06:23.000 Obviously, emissions emitted in one location have impacts on populations in the other side of the globe.

00:06:23.000 --> 00:06:50.000 It's very it's very complex and you know poses really thorny problems in terms of global governance in terms of not just what to do but who are sort of the actors that are involved in global governance related to who really gets to participate in the process.

00:06:50.000 --> 00:07:03.000 So in terms of, responding to climate change, the main governance mechanism that we have is the UNF, so the, framework, of climate change.

00:07:03.000 --> 00:07:19.000 This went in force in, 1,994 and has near universal membership by parties. This went into force in 1994 and has near universal membership by, parties.

00:07:19.000 --> 00:07:27.000 So the signatory parties are in. 90 94 and has near universal membership by, parties.

00:07:27.000 --> 00:07:35.000 So the signatory parties are our nation states, this question of who gets to participate in this process. It's really nations things. And, the aim is to prevent dangerous human interference with the climate system.

00:07:35.000 --> 00:07:49.000 It directs, finance flows to activities in developing countries. And has a series of reporting requirements on greenhouse gas emissions and plans for adaptation.

00:07:49.000 --> 00:08:06.000 So. Part of the UNFC is a parents agreement which I'm sure you've all heard of and this gives us the specific targets for warming by the end of century of 2 degree and 5 degrees.

00:08:06.000 --> 00:08:15.000 And, essentially it operates on a 5 year cycle of increasing ambition for action and countries essentially submit their nationally determined contributions.

00:08:15.000 --> 00:08:27.000 That lay out their plans for emissions reductions, and also their plans for adaptation and also their plans for adaptation and events for.

00:08:27.000 --> 00:08:39.000 Financing. And as there is a global stoptake process built into this which has just

00:08:39.000 --> 00:08:50.000 Thanks. Something With the mouse?

00:08:50.000 --> 00:08:58.000 Yeah, so. So we have a plan, the UNFC, we have this global governance response.

00:08:58.000 --> 00:09:04.000 We have this global governance response. We have the Paris Supreme. So where are we in terms of meeting the.

00:09:04.000 --> 00:09:11.000 So where are we in terms of meeting the targets, that we're set out in the, in the Paris agreement.

00:09:11.000 --> 00:09:18.000 Well, that, and, so, we're on we in terms of meeting the targets, that we're set out in the, in the Paris agreement.

00:09:18.000 --> 00:09:21.000 Well, that, and, sort of summarized here in this figure from the, UN, EP, emissions cap report.

00:09:21.000 --> 00:09:33.000 Here are the the emissions pathways that are consistent with the 2 degree and the 1.5 degree targets under the Paris Agreement so the 2 degree target is in blue there and the green shading is the 1.5 degrees.

00:09:33.000 --> 00:09:53.000 So this essentially shows you the emission, the range of emission pathways that are consistent with limiting temperatures below 2.5 degrees with a 66% so it's not not a hundred percent it's 2 thirds.

00:09:53.000 --> 00:10:04.000 And you can see these emission, you know, where we want to be in So where we are now is shown here.

00:10:04.000 --> 00:10:19.000 This is basically here. This is where our current policies would take us in 2,030. This is where we would be if the national independent contributions that have been submitted under the Paris Agreement were fully implemented.

00:10:19.000 --> 00:10:28.000 So you have, the unconditional NDCs and then some additional emissions reductions, which are part of these conditional N.

00:10:28.000 --> 00:10:54.000 Thank you for the recognition to take another. So essentially what this shows you is that there remains and a really substantial gap between what has been, a really substantial gap between what has been pledged in the, Paris agreement, and a really substantial gap between what has been pledged in the, Paris agreement, Ndc's and where we need to be to reach the substantial gap between what has been pledged in the, Paris agreement, Ndc's and where we need to be

00:10:54.000 --> 00:11:06.000 to populations on the planet. We really need to be looking at the 1.5 degree target where we have you know really a long way to go, on track to.

00:11:06.000 --> 00:11:20.000 This is talking. So I mentioned that built into the Paris agreement is take a process which really is to monitor the sort of collective progress under the Paris Agreement.

00:11:20.000 --> 00:11:33.000 So this sort of first round was just published earlier this month so you can see some of the key findings related to mitigation that I pulled out here essentially The agreement is working.

00:11:33.000 --> 00:11:42.000 Action is proceeding, but you know, much more needs to happen. It's, it's progressing far too slowly.

00:11:42.000 --> 00:11:59.000 You also you have action by the parties, but there's really an important role for these non party actors, including civil society, the private sector, financial institutions, and self-national authorities, including cities.

00:11:59.000 --> 00:12:04.000 You know, we need urgent action to ramp up implementation of mitigation and this really needs to happen across all sectors.

00:12:04.000 --> 00:12:17.000 You know, we need systems level transformation across all sectors. And, and, you know, basically everywhere and this really is invariably has to involve scaling up.

00:12:17.000 --> 00:12:26.000 Renewable energy, raising out fossil fuel use as well as dealing with deforestation.

00:12:26.000 --> 00:12:32.000 And, I'm targeting non CO 2 emissions. So where are we in terms of emissions?

00:12:32.000 --> 00:12:53.000 You know, we still have not peaked in terms of global greenhouse gas emissions. Increase there was this sort of short reduction during the COVID pandemic but we've essentially rebounded from that.

00:12:53.000 --> 00:13:17.000 Continue to increase. So you can see Much of those emissions are related to fossil fuel, based CO 2, but I think it's important to point out the contribution of these other non CO 2 greenhouse gases like methane here so you can see it's quite a sizeable contribution from methane that has has been increasing over time.

00:13:17.000 --> 00:13:30.000 And is quite important when we start thinking about the health co-benefits of climate change mitigation, essentially because it's a short lived greenhouse.

00:13:30.000 --> 00:13:41.000 Which I'll say a little bit more about. In minute and is one of the main sources of nothing is related to our.

00:13:41.000 --> 00:13:59.000 She has direct implications for health. So, probably this looks somewhat familiar. Obviously, when we start looking at specific sectors that are contributing to global greenhouse gas emissions, much of it is coming from energy, this is energy and industry, transport, and heating buildings.

00:13:59.000 --> 00:14:16.000 But, you know, almost 20% are coming from agriculture and forestry and land use. So, you know, we want to keep that in mind also when we're thinking about, you know, how, what to be thinking about in terms of how many getting climate change can.

00:14:16.000 --> 00:14:30.000 But can also deliver health benefits. So we have this concept of co benefits maybe you've heard this term before it's not a very satisfactory term in my opinion because I think it's quite nonspecific.

00:14:30.000 --> 00:14:43.000 It essentially gets at this idea that you have positive effects of a policy with a sort of primary target that also has impacts on another target.

00:14:43.000 --> 00:14:45.000 So in this case we're talking about mitigating climate change. That's the primary objective, but it has these ancillary other impacts.

00:14:45.000 --> 00:14:55.000 Which could be co benefits on the environment. On the economy or on public health, which is what we want to talk about today.

00:14:55.000 --> 00:15:10.000 So. We're talking about is the health co benefits of climate change mitigation. There are also co- Benefits of adaptation, which for the interest of time I might say much about and they have other names ancillary benefits.

00:15:10.000 --> 00:15:28.000 Sort of win wins, which sometimes makes it quite hard to, you know, sort of identify. Where this concept is being used in sort of the broader discussion around.

00:15:28.000 --> 00:15:36.000 So this is a conceptual model from a review linked looking at the, benefits of climate policy and you can see there are many different pathways here.

00:15:36.000 --> 00:15:50.000 And most of them Eventually end up in one of these. Leading to these sort of purple boxes, which are related to human health and well-being.

00:15:50.000 --> 00:15:58.000 So at least on a conceptual level, we, you know, believe that there are these various pathways linking climate change mitigation to health and well-being.

00:15:58.000 --> 00:16:10.000 But when we really look at the literature and terms of what has been actually frantified,

00:16:10.000 --> 00:16:18.000 The literature is very dominated on the COVID if it's related to air quality. So what does climate change mitigation mean for air quality?

00:16:18.000 --> 00:16:25.000 This is where really the bulk of the literature has focused. Some of that literature is the next step and looking at what that means for public health.

00:16:25.000 --> 00:16:31.000 But we have much less evidence related to some of these other really important pathways related to science, physical activity, to biodiversity.

00:16:31.000 --> 00:16:43.000 So it's, you know, it's not a small literature, but it's an unbalanced literature.

00:16:43.000 --> 00:16:47.000 So now let's go a little bit of. Further and looking at the co-benefits of the health competence of mitigation.

00:16:47.000 --> 00:17:02.000 Why is this concept compelling? Why is it important to do this research trying to quantify these health code?

00:17:02.000 --> 00:17:26.000 You know, essentially as I see it, it's a way to engage actors who might not otherwise be engaged in motivated to mitigate because it essentially highlights this direct benefit to to them and sort of enhances the for them to take these steps in terms of mitigation.

00:17:26.000 --> 00:17:34.000 And that is because the health benefits and the associated economic benefits basically are happened locally while of course the mitigation benefit is diffuse and happens at a global scale.

00:17:34.000 --> 00:17:48.000 The health and economic benefits happen, you know, for in in the area doing the mitigation and relatively immediately.

00:17:48.000 --> 00:17:58.000 So phasing out a qualified power plant, you the improvements in air quality are relatively immediate, the impact on public health relatively immediate.

00:17:58.000 --> 00:18:08.000 And so it really adds this other sort of lever and I can set the incentives for for action.

00:18:08.000 --> 00:18:35.000 So essentially we're trying to identify whether there are these sort of win-win interventions that can deliver greenhouse gas emission reductions as well as improving public health and this is I think a nice example focused on air pollution so on the list you have here over on the side a set of interventions in different sectors that are you know ways we know we can produce air pollution.

00:18:35.000 --> 00:18:54.000 And, so you have these interventions sort of. Mpped out in this kind of solution space here with the health benefits of reduced PM 2.5 refined particles on the y-axis and on the x-axis the reduction in CO 2 equivalent.

00:18:54.000 --> 00:18:58.000 The size of the bubble is related to the cost effectiveness and the color is related to the difficulty of the implementation.

00:18:58.000 --> 00:19:13.000 So you have these very clear sort of win-win interventions like this one here, which is essentially phasing out coal-fired power plants and replacing them with renewable energy.

00:19:13.000 --> 00:19:22.000 You know, it delivers both benefits to productions relatively easy to implement very cost effective in comparison to something like this.

00:19:22.000 --> 00:19:34.000 Which is you know doing a great job of reducing attributable burden to air pollution but doesn't really have the impact on greenhouse gas emissions.

00:19:34.000 --> 00:19:43.000 And so what that corresponds to is removing sulfur in in.

00:19:43.000 --> 00:19:54.000 So I mentioned short-lived climate pollutants. These are powerful climate forces that remain in the atmosphere for a much shorter period of time than CO₂, but have much higher warming potential.

00:19:54.000 --> 00:19:59.000 So they're really important targets for mitigation in this sort of nearer term. And several of them are very relevant for health.

00:19:59.000 --> 00:20:16.000 So attention is methane. There's also black carbon, which is a subset of particulate matter, which is, you know, the house damaging, ozone, with secondary air as well that has direct health types.

00:20:16.000 --> 00:20:23.000 And, you know, it's estimated that with cost-effective technology we have now, we could reduce black carbon by 70% by 2,030.

00:20:23.000 --> 00:20:41.000 And nothing by 45%. So there's really, you know, a big potential benefit of focusing on these non CO₂.

00:20:41.000 --> 00:21:01.000 Greenhouse gas, greenhouse pollutants in, in terms of their near term benefit. We also have to deal with CO₂ but this is so when we look at, the work that's been done to quantify the health co benefits of climate change mitigation.

00:21:01.000 --> 00:21:30.000 The vast majority of the evidence that we have are based on modeling sense. There is much smaller literature that are based on observational studies, which are very important because then you can really start to see how some of the barriers to implementation of policies and some of these unexpected consequences are unexpected consequences that play out in in reality in effect, you know, how far we can go in terms of achieving these healthcare benefits, but mostly it's

00:21:30.000 --> 00:21:45.000 done through modeling and scenario modeling. So asking these sort of what if questions and so some of the considerations in doing that kind of study is, you know, really are the scenarios meaningful.

00:21:45.000 --> 00:21:55.000 Is it clear what the reference is? You know, as a clear what the baseline is, how far to project into the future in terms of the climate change community they often project out to the end of the century where you can really start to see big differences in different scenarios.

00:21:55.000 --> 00:22:25.000 In terms of warming, that's much trickier to you when we're looking at health because we're so many uncertainties around just get graphics the health status of the population so it's much more difficult to see something like 2050 20 2040 if you're taking this population into the future what aspects of the future can be projected and changed is, is really an important part of these kinds

00:22:33.000 --> 00:22:52.000 of. Studies in terms of economic development, urbanization, demographics, you know, all of these things which are really important drivers of public health, you know, You need to understand how they're impacting, the estimates related to.

00:22:52.000 --> 00:23:00.000 And I think it's very important to keep in mind that the goal of these studies is not to predict, you know, what's going to happen in the future.

00:23:00.000 --> 00:23:05.000 It's really to gain insights into sort of what are the big drivers of future health under these different scenarios.

00:23:05.000 --> 00:23:20.000 Is it? Economic development or is it the specific exposure pathways that we can in that we can influence with these mitigation actions.

00:23:20.000 --> 00:23:42.000 So this is a sort of conceptual. Diagram linking, you know, showing the pathways, linking mitigation actions at health, what you see here are the sort of main sectors of the economy that have the most important impact on greenhouse gas emissions.

00:23:42.000 --> 00:23:51.000 So when we're thinking about where to do the mitigation, you want to do it where it matters, focus on the sectors that are contributing most.

00:23:51.000 --> 00:23:54.000 Then these interventions in these sectors have the potential to influence a number of exposure pathways.

00:23:54.000 --> 00:24:08.000 You know, obviously air pollution is there. It's linked to basically all of these different sectors, but it's not just air pollution that we should be thinking about.

00:24:08.000 --> 00:24:25.000 There are a number of other relevant exposure pathways that that can be impacted and you know, we know much less about really what those, the the co benefits that potentially can be Have to achieve through these exposure pathways.

00:24:25.000 --> 00:24:46.000 And these are linked to a number of different health outcomes. So, you know, non-communicable diseases, mental health, infectious diseases, unintentional injury, potentially when we're looking at thinkings that impact the transport sector.

00:24:46.000 --> 00:25:07.000 So in, this sort of summarizes in some of the things that I've said before, but in starting with this kind of modeling work, essentially the first steps are to identify the scenarios, develop the scenarios, and to set a very clear baseline to determine the population.

00:25:07.000 --> 00:25:24.000 And what timescale you want to look at. Identify which drivers of health you want to include in the projections so demographics, health status, you know there can be time trends in the exposures that are that exist aside from the impact of the mitigation action on the exposure.

00:25:24.000 --> 00:25:34.000 Then you move to this impact assessment. Step here, which is estimating how the mitigation action in influences those exposures that I was mentioning.

00:25:34.000 --> 00:25:50.000 And then how the change in exposure Yeah, impacts health outcomes. And this is usually done by either using this this second step here by using exposure response functions.

00:25:50.000 --> 00:26:06.000 From epidemiology studies that have been published. So you want very robust estimates. So these typically come from, you know, well established relationships where we have a lot of literature that can be summarized in systematic views and other analyses.

00:26:06.000 --> 00:26:16.000 That's one way to do it is to use these sort of exposure response functions from the literature that are external to the population that you're actually doing modeling.

00:26:16.000 --> 00:26:32.000 But there are also opportunities to potentially fit your own exposure response function in the population that sort of changes the assumptions that you're making.

00:26:32.000 --> 00:26:41.000 You don't have to sort of extrapolate it, you know, an effect, an, from another population to your population, generate it in your population.

00:26:41.000 --> 00:26:53.000 If you have, let's say, big enough sample size to get a robust investment and then take that through into the, the health, impact destination there.

00:26:53.000 --> 00:27:23.000 There's, it can be potentially very impactful to add economic valuation onto those estimates to try and quantify the economic value of the health savings and compare that to the costs of mitigation because what you often see when looking at climate change mitigation is a huge emphasis on the costs of mitigation action and what you often don't see is enough let's say discussion or let's say reference to what we know about

00:27:23.000 --> 00:27:35.000 the potential benefits of mitigating and that that that discussion really needs to be balanced out because There are huge savings that can be achieved through, you know.

00:27:35.000 --> 00:27:47.000 That's some mitigation strategies. And then, then this last step, it's about, testing some of the uncertainties, through sensitivity and the answer to the analysis.

00:27:47.000 --> 00:27:50.000 So I wanted to, give you a few examples from Google literature, of studies that have done this.

00:27:50.000 --> 00:28:03.000 So this is a paper that was published a few years ago from a Neil Marcandus group.

00:28:03.000 --> 00:28:16.000 He's an environmental economist and this is looking at different pathways to achieve the Paris Agreement targets of the 2 degree target and the 1.5 degree target.

00:28:16.000 --> 00:28:22.000 So you can see what these different scenarios look like in terms of CO₂ emissions out to 2,050 here.

00:28:22.000 --> 00:28:32.000 So, well, I guess you can't see that it's this being covered up.

00:28:32.000 --> 00:28:40.000 Anyhow, those scenarios, you have,

00:28:40.000 --> 00:28:54.000 Okay, here's thank you. This is the baseline. This is what would the, look like under the national, and then this is what the emissions would look like under these different targets.

00:28:54.000 --> 00:29:08.000 The 2 degrees, 5, but then what they did is look at who does the. So they have these different scenarios, chat, ER, the emissions reductions.

00:29:08.000 --> 00:29:13.000 So they have these different scenarios, TAP, ER, and EC. So in the top scenario, countries with the highest historical emissions, make the biggest costs.

00:29:13.000 --> 00:29:20.000 CER, the countries that have the highest per cabinet emissions in baseline. Continue to have high per capita emissions.

00:29:20.000 --> 00:29:29.000 And then in the PC you have a sort of convergence, in, per capita emissions.

00:29:29.000 --> 00:29:42.000 And then what they did was look at the that could be avoided due to air pollution under these scenarios and you can see that you have the lowest attributable burn into air pollution under this cap.

00:29:42.000 --> 00:30:12.000 So basically in a way the most equitable way to get the emissions reductions and what I didn't hear was the work that they did on the costs associated with this, but what is clear particularly in in world regions that have high air pollution levels that the costs savings from the reduction in mortality, from air pollution, the outweigh the mitigation costs.

00:30:21.000 --> 00:30:46.000 Or not. Here's another example, which is looking at food systems. So this is, a paper from Martha Springman from a few years ago and this is looking at the health and environmental impacts of dietary change in in 2,050 and you can see here the scenarios so there's a reference scenario which is essentially just projecting future diets.

00:30:46.000 --> 00:30:53.000 This is done by the food and agricultural organization. Then there's another scenario which is based on healthy eating.

00:30:53.000 --> 00:31:02.000 Guidelines, but, so, in terms of dye transition and also energy intake.

00:31:02.000 --> 00:31:13.000 And then high a scenario with high levels of vegetarianism and high levels of. And in on the left hand side you see the avoided deaths relative to the reference broken down by the risk factors.

00:31:13.000 --> 00:31:21.000 So you can see this this color here is related to the caloric intake. So basically the reducing.

00:31:21.000 --> 00:31:35.000 Being overweight, then this is related to lowering red meat consumption. Increasing fruit and vegetable intake is is here increased.

00:31:35.000 --> 00:31:45.000 So, what you see there is that, you know, the more plant-based diets deliver very large health benefits in terms of avoided avoided mortality.

00:31:45.000 --> 00:32:01.000 And this is really driven mostly by reducing red meat. But that when you look at stuff, globally and then when you look at different world regions, you start to see some, sort of interesting pattern.

00:32:01.000 --> 00:32:12.000 So for example in South Asia where there's not very high levels of red meat consumption you know the benefits are really coming from increased food and vegetable intake.

00:32:12.000 --> 00:32:35.000 And then here you can see a more on where those emissions are coming from. So the change in food related greenhouse gas emissions under the scenarios, you know, really with the plant-based, you see, you know, huge reductions in emissions really driven by the Red.

00:32:35.000 --> 00:32:43.000 This is just another example which is looking at active travel. So this, paper they looked at different sectors.

00:32:43.000 --> 00:32:48.000 I've just pulled out the, results related to active travel, where they're looking at meeting the Paris Agreement targets in a number of countries.

00:32:48.000 --> 00:33:18.000 By essentially getting people out of private motorized vehicles and into active transport, to walking and cycling and you can see that under these scenarios where you have very high levels of walking and cycling so the sustainable pathway and the health and all climate policies pathways you get you know quite large healthcare benefits particularly in places that have low levels of active travel.

00:33:26.000 --> 00:33:50.000 So. Kai mentions that, the, project, this is a 5 year, Horizon Europe project, that, that I leave, we started last September, so, but this One of the big focuses of this project is related to quantifying the healthcare benefits climate change mitigation in Europe, really responding to the policy.

00:33:50.000 --> 00:34:06.000 Context in Europe to provide, you know, evidence to guide policymaking in in in Europe as you know, we're there are a lot of discussions on how to get to, net 0, which is a legally binding target for the European Union.

00:34:06.000 --> 00:34:15.000 So there's a net 0 target for 2050. You know, how do we get there?

00:34:15.000 --> 00:34:23.000 We want to make sure that we're providing evidence on how to optimize health in in that in that pathway.

00:34:23.000 --> 00:34:36.000 So there are many parts. The project aside from the healthcare benefits mitigation, there's a lot of work around, early morning systems and developing surveillance systems, a big focus on knowledge translation.

00:34:36.000 --> 00:34:47.000 So how does evidence get used by policy and decision makers? You know, how can we do it better basically so that that evidence you know gets into the policymaking process and then there's a big focus on health systems.

00:34:47.000 --> 00:34:55.000 In terms of the adaptation but also mitigation in the health system. And the product overall, you know, really tries to answer these 3 questions.

00:34:55.000 --> 00:35:06.000 How we optimize health, climate change, mitigation and adaptation in Europe. How to close this knowledge to action gap to accelerate climate change.

00:35:06.000 --> 00:35:16.000 We already know odd but that evidence doesn't get used. Often we want to understand why.

00:35:16.000 --> 00:35:36.000 And how to, improve that, that, that knowledge translation process and then how should help systems adapt and so just to say a little bit about the work related to go benefits there, will be doing, you know, work.

00:35:36.000 --> 00:35:52.000 A lot of work goes into developing the policy scenarios what are the main policies you know what scale of ambition do we want to cover how do we translate a specific cause on a piece of paper into emissions of greenhouse gases and air.

00:35:52.000 --> 00:36:05.000 We're also looking at some other environmental. System impacts. And then, how to more go from that mitigation action to changes in the exposure pathways that that was.

00:36:05.000 --> 00:36:16.000 Or so we're doing that for. Buildings for food systems transport and then we'll do a sort of integrated social cost benefit analysis.

00:36:16.000 --> 00:36:29.000 So just moving on to say a little bit about the, account down, who's heard about the so that's, great.

00:36:29.000 --> 00:36:37.000 Basically there's a family of countdown so the main one is the global countdown then we have regional centers that are focusing in more detail on specific regions.

00:36:37.000 --> 00:36:56.000 And but they more or less follow the same structure. And really the the purpose is to track. Progress or the lack thereof in addressing climate change as it relates to health and the main output are these indicator reports which are published more or less.

00:36:56.000 --> 00:37:10.000 Annually, you know, which really are these, you know, where are we? Are we improving or not improving?

00:37:10.000 --> 00:37:19.000 And, you know, it are very useful sort of communication tool for a number of different audiences to, you know, really make that link.

00:37:19.000 --> 00:37:26.000 With health very clear because you know in many many instances people are thinking about climate change but not necessarily with health.

00:37:26.000 --> 00:37:42.000 So, the European countdown, in, was established few years ago and the first indicator report was published, last autumn, so in, 2,022, and we'll have another one in the spring of 2024.

00:37:42.000 --> 00:37:52.000 And it follows more or less the same structure as the global countdown. So we have different working groups and the first working group is focused on the health impacts of climate change.

00:37:52.000 --> 00:38:04.000 So really indicators that track climate change related hazards. Population exposure to those hazards. Population vulnerability and climate change related sort of.

00:38:04.000 --> 00:38:17.000 So there's a lot of focus there. Temperature. On infectious diseases. So, changes in the suitability of, of different infections.

00:38:17.000 --> 00:38:24.000 Diseases in Europe. Poland, wildfire smoke. These are some of the indicators that are in that section.

00:38:24.000 --> 00:38:32.000 The next, working room focuses on adaptation. And so this is looking at indicators related to planning and preparedness for climate hazards at different scales.

00:38:32.000 --> 00:38:47.000 The level of implementation of these plans, and then implementation of early morning monitoring and response. So the third working group is focused on mitigation.

00:38:47.000 --> 00:39:17.000 So this covers, these non-health sectors that I was mentioning earlier, but we also include here mitigation in in the healthcare system in this work group and essentially are trying to track you know where we are in terms of you know level of mitigation and some of the attributable burdens.

00:39:18.000 --> 00:39:26.000 For, 7 to 6 bunch of pathways. So here are some examples, from the last indicator report.

00:39:26.000 --> 00:39:53.000 So this is an indicator tracking the carbon intensity of the energy system in Europe. So you can see here this, this is twenty-fifty where, you know, we need to get to net 0 across all sectors and you know where we are now so these are the observed data basically if you just extrapolate that out you're on that black line which you can see is you know very far away

00:39:53.000 --> 00:40:01.000 from where we need to be. So, you know, this This slope needs to be 5 times greater to get us to net 0 by 2050.

00:40:01.000 --> 00:40:12.000 So huge need to accelerate decarbonization of the energy system in Europe. And it is going in the right direction, but just, you know, really not fast enough.

00:40:12.000 --> 00:40:23.000 You can see more or less a similar picture with cold phase out in Europe. So coal has, dropped a lot since the ninetys.

00:40:23.000 --> 00:40:31.000 You can see 56% reduction since 1,991, but it still comprises about 12% of the energy supply in Europe.

00:40:31.000 --> 00:40:43.000 That even you know it was complicated further with the Russian invasion. Of Ukraine and what that did for that 2 system in Europe, back to coal.

00:40:43.000 --> 00:40:49.000 You know, the current rates of reduction are incompatible with reaching that 0 by 2,050.

00:40:49.000 --> 00:41:06.000 When you look at it by country, there are some really interesting things going on here. So you can see some countries that have been very successful at phasing out poll like the UK here and also Spain is this You know, they've basically done it.

00:41:06.000 --> 00:41:18.000 And then you have some other countries particularly in eastern Europe which that still have very high levels of pollen, particularly, in Eastern Europe, particularly, in Eastern Europe, that still have very high levels of poll.

00:41:18.000 --> 00:41:21.000 And this is, you know, the sort of driver of, you know, some of the political discussions around this.

00:41:21.000 --> 00:41:29.000 So, This is an indicator related to premature mortality. Due to fossil fuel combustion, so you can see the air pollution attributable of deaths by European region and by fossil fuel type.

00:41:29.000 --> 00:41:55.000 So you can see in most of Europe the main driver of air pollution related deaths is from basically transport liquid fuels, or transport in in central and eastern Europe, it's a different picture where it's much more about coal.

00:41:55.000 --> 00:42:02.000 From power plants and from domestic heating.

00:42:02.000 --> 00:42:10.000 And the 1 point just to mention here is that while you see, so quite clear reductions in the attributable mortality over time.

00:42:10.000 --> 00:42:26.000 Many of these have been achieved through sort of technology improvements in terms of vehicle efficiencies and things like this which have reduced the air pollution but have not delivered the CO two. So again, there's an opportunity for wind winds that is not being achieved.

00:42:26.000 --> 00:42:33.000 Here. And this is an indicator related to, to food. So you can see between 2010 and 2,019, very little progress.

00:42:33.000 --> 00:42:51.000 In reducing emissions associated with food. The animal source foods that are responsible for most of those emissions. So this is, you know, basically meat and theory.

00:42:51.000 --> 00:43:18.000 So the other going back to the working groups, we have a working group focus on, economy and finance that's really trying to track the cost of climate change related health impacts and what the economic transition to low-carbon economy would mean and then finally a working group focused on politics and governance and they're really looking at engagement with the concept of climate change in health.

00:43:18.000 --> 00:43:26.000 By different actors, citizens, media, governments, civil society, the private sector, for example.

00:43:26.000 --> 00:43:37.000 Okay, so now what I would like to do is a short exercise to get you thinking I'm seeing some yawns so it's definitely time to stop talking and you can now.

00:43:37.000 --> 00:43:52.000 Do something a little more interactive and the idea to, you know, start thinking about how to maximize health in this path to at 0 and, you know, who is responsible for driving this change.

00:43:52.000 --> 00:44:06.000 So what I would like to do is split the room into 3. Into 3 groups. I would do is I

00:44:06.000 --> 00:44:17.000 . So maybe These 2 rows can be group one, these 2 rows can be group 2. Rose in the back, the group 3, and if anyone else.

00:44:17.000 --> 00:44:22.000 Isn't included in, you know, sitting on the side, this first cube, which is quite small.

00:44:22.000 --> 00:44:38.000 So what I would like you to do, first, I would like to show you this figure, which I think is really a powerful figure which comes from this report, called, which comes from this report, called The Future is Now, which is looking at transformations for sustainable development.

00:44:38.000 --> 00:44:53.000 And it refers to these different level levers of change so you know we have not just governance it's not just about sending laws banning fossil fuels, this kind of thing.

00:44:53.000 --> 00:45:00.000 There are other levers that are important to think about. If economy and finance, so taxation, subsidies, but also individual collective action and the role of science technology or the private sector there.

00:45:00.000 --> 00:45:17.000 So these are I think very powerful lovers that I want you to think about in going to, and the role of science, technology, the private sector there.

00:45:17.000 --> 00:45:24.000 So these, are, I think very, What I would like you to do is each group to take a row.

00:45:24.000 --> 00:45:32.000 So, one, if you could take the first row. Here, group 2, the second row, group 3, the third row.

00:45:32.000 --> 00:45:44.000 So you see there are some cells in the rows that have been filled out, but, what I'd like you to do in the next 10 min is to discuss amongst yourselves and fill in the other rows.

00:45:44.000 --> 00:45:54.000 And then you can, be back to us what you what you So each row is referring to a mitigation action.

00:45:54.000 --> 00:46:02.000 And then, you know, you can discuss sort of what that means in terms of, you know, is this, you can also.

00:46:02.000 --> 00:46:29.000 Edit or you know modify the information in the rows if you think in the cells if you think that's relevant but you know are this is basically identifying the lever of change who does the change what does it mean for air pollution basically because which is is one of the big exposure pathways but there are other potential exposure pathways that you should be other potential exposure pathways that you should be considering and then what are the equity issues

00:46:29.000 --> 00:46:47.000 associated with that? Because obviously considering the equity issues is really essential to make these mitigation. Socially acceptable basically if we want to really see that implemented in policy that has to have.

00:46:47.000 --> 00:46:55.000 Consideration of equity issues, you know, is part of this idea of adjust transition. So what is, you know, what needs to be, completed there.

00:46:55.000 --> 00:47:10.000 So over to you, I'll give you 10 min. 2. So in the voice. I'll be, Okay.

00:47:10.000 --> 00:47:20.000 Yeah. Okay. Okay, so maybe you have I don't know.

00:47:20.000 --> 00:47:24.000 2 min and.

00:47:24.000 --> 00:47:54.000 Oh, okay. And, Gotcha. Okay. She's already in a Thank you guys.

00:48:14.000 --> 00:48:44.000 Okay. Okay. Yeah, And like, That's Oh, That Thank you. Yeah.

00:49:13.000 --> 00:49:25.000 C. Yeah.

00:49:25.000 --> 00:49:41.000 Bye. Oh, yes. Okay. Sorry.

00:49:41.000 --> 00:49:57.000 Thanks for watching. Okay. Okay. Yeah.

00:49:57.000 --> 00:50:10.000 Thank you. Let's go.

00:50:10.000 --> 00:50:34.000 Okay. Okay. I know my message. Okay.

00:50:34.000 --> 00:51:04.000 Oh, Yeah. Okay.

00:51:37.000 --> 00:51:42.000 We were discussing universities actually and like how they are invested and possible sometimes so they could be an agent for change if they stop.

00:51:42.000 --> 00:51:53.000 It's been best. So of those levers of change, what would you call that?

00:51:53.000 --> 00:52:06.000 Okay, we have governance and science and technology, but. Just like the So probably, collective action.

00:52:06.000 --> 00:52:14.000 You know, by institutions, these are, you know, like public institutions. And I think that, okay.

00:52:14.000 --> 00:52:22.000 Very interesting. The second group.

00:52:22.000 --> 00:52:26.000 Bye.

00:52:26.000 --> 00:52:44.000 Okay. Oh, like, like it. Okay, so, change. Okay, so this is, so where, what cell does that refer to?

00:52:44.000 --> 00:53:00.000 The lever for change or The agent? Who would be making these change? Or we actually, for the agents to change privates, car companies.

00:53:00.000 --> 00:53:13.000 You know, for example, we have a Tesla. Mouse re-eusting cars, electric cars, you know, in, through most of the climate action, we're trying to, you know.

00:53:13.000 --> 00:53:33.000 So The agent change there would be. The government or policies that will develop them. And, your resources to create more, Okay.

00:53:33.000 --> 00:53:37.000 Okay. The third group.

00:53:37.000 --> 00:53:46.000 We talked about a target sector for medication being like, like, and really large industrialized.

00:53:46.000 --> 00:53:58.000 Like, the industry and then we also had some good conversation about equity issues. Talking about like affordability of plant-based diets.

00:53:58.000 --> 00:54:09.000 Food solventry talks about replacing the industrialized meat sector with smaller skill or family owned offices.

00:54:09.000 --> 00:54:23.000 Well, these are really, it sounds like you had very interesting discussions and, you know, and I wish we had a little bit more time, but I think close now.

00:54:23.000 --> 00:54:41.000 Thank you very much. I'm around and see like questions. I'm just, a second, but I'm a, from the Midwest and I've been,

interested in climate change as it relates to, that's not my category of study here.

00:54:41.000 --> 00:54:50.000 I feel like as a pediatrician as a physician, you don't get a lot of information on how we kind of that's policy and change.

00:54:50.000 --> 00:55:02.000 Directly to our individual cases, but then and I wonder if the health quite receptor can also be a target sector.

00:55:02.000 --> 00:55:07.000 It's a huge agent for change and there's a lot of really, impressive moments, among health professionals to be this sort of active voice for mitigation in the health sector.

00:55:07.000 --> 00:55:21.000 And then, it's also the issue of, but even in mitigation as, you know, really interesting.

00:55:21.000 --> 00:55:31.000 Stuff that's going on, which I would say is sort of at the level of civil society. So these different organizations, but also, and also, so different, call systems that are really So,

00:55:31.000 --> 00:55:51.000 Yeah.