MEETING

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PUBLIC EMPLOYEES' RETIREMENT SYSTEM

BOARD OF ADMINISTRATION

INVESTMENT COMMITTEE

OPEN SESSION

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

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LINCOLN PLAZA NORTH

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TUESDAY, JUNE 20, 2023

9:22 A.M.

JAMES F. PETERS, CSR
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APPEARANCES

COMMITTEE MEMBERS:

David Miller, Chairperson

Theresa Taylor, Vice Chairperson

Malia Cohen, also represented by Lynn Paquin

Fiona Ma, also represented by Frank Ruffino

Lisa Middleton

Eraina Ortega

Jose Luis Pacheco

Kevin Palkki

Ramón Rubalcava

Yvonne Walker

Mullissa Willette

STAFF:

Marcie Frost, Chief Executive Officer

Michael Cohen, Interim Chief Operating Investment Officer

Matt Jacobs, General Counsel

Nicole Musicco, Chief Investment Officer

Dan Bienvenue, Deputy Chief Investment Officer

Daniel Booth, Deputy Chief Investment Officer

Robert Carlin, Senior Attorney

Peter Cashion, Managing Investment Director

Sarah Corr, Managing Investment Director

APPEARANCES CONTINUED

STAFF:

Sterling Gunn, Managing Investment Director

Brian McQuade, Investment Manager

Anton Orlich, Managing Investment Director

Lauren Rosborough Watt, Investment Director

David Teykaerts, Assistant Division Chief, Stakeholder Relations Division

ALSO PRESENT:

Valeria Alvarez, United Food and Commercial Workers

Valentina Davos, Private Equity Stakeholder Project

Jovana Figueroa, Teamsters

Jared Gaby-Beigel, United Food and Commercial Workers

Alyssa Giachino, Private Equity Stakeholder Project

Ty Hudson, Unite Here

J.J. Jelincic

Steve McCourt, Meketa Investment Group

Melissa Reyes

Sara Theiss, Fossil Free California

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PROCEEDINGS

CHAIRPERSON MILLER: Good morning. I'd like to call the Investment Committee meeting to order. And we'll start by calling the roll.

BOARD CLERK TRAN: We're waiting to be invited to the Zoom session really quick.

CHAIRPERSON MILLER: Oh, okay.

CHAIRPERSON MILLER: Momentary delay.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Good morning, everyone. This is David Teykaerts. Just testing the public comment line. Can you confirm that you can hear me?

BOARD CLERK TRAN: Hi, David. We can hear you.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Wonderful. Thank you.

BOARD CLERK TRAN: David Miller?

CHAIRPERSON MILLER: Here.

BOARD CLERK TRAN: Theresa Taylor?

VICE CHAIRPERSON TAYLOR: Here.

BOARD CLERK TRAN: Controller Malia Cohen?

COMMITTEE MeMBER COHEN: Good morning. Present.

BOARD CLERK TRAN: Treasurer Fiona Ma?

COMMITTEE MEMBER MA: Here.

BOARD CLERK TRAN: Lisa Middleton?

COMMITTEE MEMBER MIDDLETON: Present.

BOARD CLERK TRAN: Eraina Ortega?

COMMITTEE MEMBER ORTEGA: Here.

BOARD CLERK TRAN: Jose Luis Pacheco?

COMMITTEE MEMBER PACHECO: Present.

BOARD CLERK TRAN: Kevin Palkki?

COMMITTEE MEMBER PALKKI: Good morning.

BOARD CLERK TRAN: Ramón Rubalcava?

COMMITTEE MEMBER RUBALCAVA: Present.

BOARD CLERK TRAN: Yvonne Walker?

COMMITTEE MEMBER WALKER: Here

BOARD CLERK TRAN: Mullissa Willette?

COMMITTEE MEMBER WILLETTE: Here.

BOARD CLERK TRAN: Dr. Gail Willis?

CHAIRPERSON MILLER: Okay. I'm going to take things out of order here a little bit. And so we're going to go now to action consent, Item 3a and 3b. What's the pleasure of the Committee?

VICE CHAIRPERSON TAYLOR: Moved.

CHAIRPERSON MILLER: Okay. Moved by Director Taylor.

COMMITTEE MEMBER PACHECO: (Hand raised).

CHAIRPERSON MILLER: And seconded by Director Pacheco.

All in favor?

(Ayes.)

CHAIRPERSON MILLER: Any opposed?

Any abstentions?

Okay. The motion carries. Moving to Item 4, information consent items. I have no requests to pull any of these items, so we'll move on and -- to Item 6. This is the information items on current trends in investing in sustainability. And we have a 9:30 time certain to start that, but I'll turn it over to our Chief Investment Officer, Nicole Musicco to kind of give us the intro to this item.

CHIEF INVESTMENT OFFICER MUSICCO: Okay. Great. Thank you. I'll make my introductory comments brief today just with the time certain.

First off, I'd just like to say thank you so much. We're really excited for -- I'm excited for all the Board meetings, but this one in particular, because it's a real mix of giving you some insights into some of the themes that are top of mind for us. I think anyone sitting in my chair or in the Investment team's chair today, big picture themes that are on our mind are everything from inflation, relations with China, how we're thinking about climate and energy transition and AI as a very -- you know, recent very hot topic. And I think you'll find today hopefully that we're giving you a glimpse into how we are thinking about these themes, and executing on these themes, and preparing ourselves and the portfolio for these themes through the different pieces of the agenda item.

With respect to inflation, as you know, we've just kind of finished and era here where we don't really know where things are going to shake out. We went from this era of spending money to be more efficient, finding ways to bring costs of goods down, et cetera. And now we're in an era where we're frankly spending to better prepare ourselves to compete with places like China and other parts of the world deglobalizing, et cetera, and therefore, those market forces have made it quite uncertain where we're going to land on inflation. So through the resiliency and innovation lens that we often talk to you about, we're thinking about that and we'll delve into that today a little bit with respect to some of the business initiatives.

On the topic of climate in particular, we're really delighted today to welcome Mark Carney who we'll have come up in a moment. Mark is really a global thought leader on investing in energy transition. He has an incredible background as both a banker and economist. He was the Governor for the -- Bank of England. He was Governor for Bank of Canada. I think most importantly he's taken his -- all of that knowledge, and insights, and his global network and really become, you know, the thought leader. And we're delighted to have him here today and so that is another part of the agenda that we will be delving into.

As we think about climate change in general, you'll be hearing from us more at the Board about our sustainable investing strategy, but we'll touch a bit on some of our thoughts within my conversations with Mark today, and that's being lead Peter Cashion, and it part of some of the business initiatives that we will -- part of one of the business initiatives that we'll walk you through.

And with respect to the other theme of AI, and China in general, both of those topics and how we're thinking and preparing for those thematics are also woven into parts of our agenda today. So very rich agenda.

We've also committed to you that like in pastimes where we give you a deep dive on the private equity asset class, we're now introducing a rolling deep dive of each of the asset classes. You just so happen today to be getting private equity, but you'll also get a deep dive into real assets. And then we'll also add on another thing that we committed to do, which is just to do more Board education, really to make sure that we're bringing you along on some of the research, or the insights, or the themes, or our approach of building resiliency or innovation. And that topic today is under by heading of risk budgeting and it will be presented by Sterling and Michael Krimm.

And so with that, just give we had a time -- a time crunch of 9:30, I'd like to welcome our guest today, Mark Carney, where we're going to have a -- I'll try to do a moderated panel here. It will be a little awkward, but if I could invite Mark to come join me up here. Really excited to have a bit of free-flowing conversation, and we'll certainly leave time at the end for any of you to ask any questions.

So with that, I'll turn it back to you, Chairman Miller.

CHAIRPERSON MILLER: Great. Welcome. And I'd like to welcome Mr. Carney. And I think we'll be just about right on time to get started here. Really exciting. We've got a very full agenda today, so we'll try to keep it flowing along. And without further ado, I will turn it over. You have the floor, sir.

CHIEF INVESTMENT OFFICER MUSICCO: Just to confirm timing, Chairman. Do we have an hour allocated to this? I want to make sure that we spend the appropriate amount of time.

CHAIRPERSON MILLER: Let's see, we have 30 minutes for presentation and 30 for Q&A, so --

CHIEF INVESTMENT OFFICER MUSICCO: Wonderful. That's what we were --

CHAIRPERSON MILLER: -- we can be flexible with it.

CHIEF INVESTMENT OFFICER MUSICCO: Okay. That's what we planned for. Okay. Great. Hi, Mark.

Thank you so much for joining us. It might make -- just for the pleasure of the Board, if you could just give us a very brief bit of background of your journey to how you sit here today. And I introduced you, and I meant it wholeheartedly, that you really are seen as a really global thought leader and certainly a very important strategic partner to us in your role at Brookfield, but maybe you could just give the Board a bit of your background, your path that got you here and then we're going to get into the real meat of the topic, which is talking about energy transition.

MARK CARNEY: Okay. Great. It's a great honor to be here. Thank you very much for inviting me and for your service. To keep it short where my focus -- more intense focus on climate change really began as Governor of the Bank of England. As Governor of the Bank of England, you're responsible for monetary policy, setting interest rates, keeping inflation under control, you're overseeing the banks, but you also oversee and supervise the world's fourth largest insurance industry and included in that, one of the most important reinsurance markets in the world, which is Lloyd's of London.

And if you oversee those property and casualty insurers and reinsurers, you realize, as I did, that over the course of the previous 25 years, the number of extreme weather events, hurricanes, flash flooding, forest fires, et cetera, had tripled, and the inflation-adjusted insurance costs, so the payouts for those, had gone up eight times. And on top of that, a much bigger number is uninsured, the insurance gap. And the recognition in the insurance industry was that these tail risks of the past were becoming into the central scenario of the present and future over time. So as Nicole mentioned a moment ago, if you're focusing on resilience, past is not prologue with respect to climate.

So, at that point, I was also Chair of something called the Financial Stability Board, which is a global grouping under the G20 of all the financial regulators, so the SEC is part of that, the Federal Reserve is part of that, and their equivalents are around the world, and we were asked in the run up to the Paris COP meeting what is the impact of climate change on financial stability, on resilience in the system?

And we identified a very simple point was -- which was the -- there are two types of risks. We had made two points in essence -- two types of risks that the financial industry faces and certainly pension funds face. The first is these mounting physical risks over time affect all aspects of assets from real estate to supply chains and businesses. And secondly, as significant and potentially more significant, is so-called transition risk. In other words, what happens when California, the United States, the world takes climate change seriously, puts in place the types of regulations and supports that, for example we've seen in the IRA - I'm sure we'll talk about that - in order for there to be an adjustment in our economies to get our emissions down?

That's a big change. We can talk about how big that change is, but old business models will become uneconomic. New business models will become economic, and to what extent is the financial industry focused on those risks that were coming closer and closer given that we were leaving the adjustment later and later.

Last point, one of the first steps we took then was to put in place -- started a process, so that the private sector would develop the type of financial information that pension funds, such as CalPERS, needed in order to make these judgments. And I should recognize

Marcie Frost the CEO's role in this as one of the early sponsors of something what's called the TCFD. Bottom line, that has been the base for what is going to become the climate disclosure standard globally over the course of the next few years. And I probably should stop there and hand it back.

CHIEF INVESTMENT OFFICER MUSICCO: That's great. No, that's a great -- very helpful to set the context. And just for the Board and for yourself, really at the end of today, we're really just trying to get to a better understanding of what is the magnitude of this challenge and are we doing enough?

MARK CARNEY: Yeah. Well, the short answer is we'e left it -- we've all left it very late, so the average temperatures are now almost 1.2 degrees above preindustrial levels. The last eight years, not including this one, have been the eight warmest on record. It looks like we may track to extend that, and that's before El Niño kicks in. I mentioned earlier the frequency of extreme weather events, and the financial implications of that. So the magnitude of the challenge is very big. Another way to frame the magnitude of the challenge, as has been shown by science, is the degree of climate change is the product of the amount of greenhouse gases in the atmosphere.

I'm going to simplify that and just talk about carbon, that's other greenhouse gases obviously, but the amount of carbon in the atmosphere. So the cumulative amount in the atmosphere drives this warming and these extreme weather events. The carbon budget that we have left -- collectively have left to keep that degrees of warming to this one and a half degree level, after which there's a sort of nonlinear effect on extreme weather events, will be exhausted in less than 10 years, based on the current level of emissions. And so the need to bend that curve globally is very strong. And as I said a moment ago, we've left it late.

The better news, and hopefully we'll get to some better news here, is that countries are now starting to act with purpose. In many cases, businesses -- some businesses have been out in front of that. And then, of course, the financial sector part of its job is to look forward to where things are going. You've touched on a number of big issues, Nicole, in your opening comments, looking forward to where Canadians, who I have to use the where the puck is going analogy --

(Laughter)

MARK CARNEY: -- it's de rigueur, but where it's going and getting capital to some of those climate solutions. And that -- hopefully we'll get into it. That dynamic is starting to kick in.

CHIEF INVESTMENT OFFICER MUSICCO: Yeah.

MARK CARNEY: So the risks are mounting quite rapidly. But on the other hand, the opportunity set is moving.

CHIEF INVESTMENT OFFICER MUSICCO: Yes. Let's talk about the bending of that curve and kind of the path or the size and scale of this transition to the low economy -- or low carbon economy, as well as trying to tease out for all of us just some of the opportunities on that -- on the good side of things and the risks, because we have to make sure we're balanced in both.

MARK CARNEY: So in terms of -- in terms bending the curve, I said I'd give a bit of good news. If -- back when I had my climate epiphany, if you will, and started working more seriously as Governor of the Bank of England on this, and we had the Paris Agreement, the assessment of what country policies were at the time. So if countries didn't introduce new policies on climate, the world was headed to three and a half degree at least of global warming by the end of this century. Fast forward to today on country policies, it's less than two and a half degrees. So that's a lot of progress. That's still a big gap to one and a half degrees, but it's a lot of progress.

And actually country commitments -- so a country like Canada would say that we want to get our emissions down by 42 percent by 2030 and then on the way to net zero by 2050. The United States is 50 percent by 2030, et cetera, et cetera. If you add up all those commitments, it's a little less than 1.8 degrees. So the commitments are getting close to where we need to go and the expectation is that we will continue to have a tightening of those commitments, a tightening of policy, which has implications for risks and opportunities. So that's the first thing in terms of the dynamic.

The second, in terms of dimensioning the opportunity -- and I would look at this as an opportunity, in fact, as a necessity, but a huge commercial opportunity, because if you're solving one of the most important problems, you are creating a lot of value. The estimates of the orders of magnitude of the investment that's required for that in new energy systems particularly, but other industries, is on the order of around 125 to 150 trillion cumulatively globally. And this is just for mitigation. It's just to get those emissions down. It's not about building better flood defenses or more climate resistant infrastructure, but -- so those are big numbers.

I'll put it in a few different dimensions that the increase in investment on average globally is about $3 trillion a year in the energy sector. And on average, that's about one and a half percentage points of global GDP. So that is both a big number, but it's also an achievable number, because if we go back to the start of this millennium, back to 2000, before some of those trends you were talking about earlier, which are now being unwound, but these trends of globalization, and efficiency and integration, that -- this increase in investment for clean energy, for reducing emissions, would bring the global investment to GDP ratio back to the level we saw 20 years ago, in effect. So we've -- the investment to GDP has been going down. It's going to go back up. So that's big scale of opportunity there.

If I were to mention it in the U.S., it's somewhere between 11 to 15 trillion dollars between now and 2050 in the energy system alone. Now, when I say the energy system alone, that's a lot of this, because three-quarters of emissions ultimately are traceable back to energy. So when we drive our cars, when we heat or air conditioner our buildings, ultimately you're tracing that back to energy. And the issue is to get that energy clean. We also obviously have to deal with issues in cement, for example, and in parts of agriculture, but the core of this is an energy transition.

CHIEF INVESTMENT OFFICER MUSICCO: We hear a lot about a just transition, and just the implications or the role frankly that asset managers, asset owners have in that just transition. Can you just clarify a bit what is meant by a just transition and what our role can be and other asset owners?

MARK CARNEY: Yes. Well, the first is that obviously with a scale of what we're discussing and what needs to happen is this is a transition -- the transition towards a clean economy or net zero economy that affects virtually every industry. One way I like to think about it is it is a transition that is on the scale of the industrial revolution, but at a pace that's something akin to the digital transformation. So it's something that is happening over the next quarter century or trying to make it happen over the next quarter century. And that means a number of workers will be affected in existing industries above and beyond the normal nature of the economy as work is turning over.

And so a just transition goes first and foremost, or another way of putting it a responsible or a fair transition, goes to workers first and communities that are going to be affected. We have fairly good line of sight where those are. If we act early, we can support those workers with retraining. We can concentrate some of the new investment in the new energies and the new solutions in the communities that are most affected. It's a requirement to -- it can't all be done from a -- by the investor, or the lender, the financial services sector, because you're working in partnership with governments and those communities. But for a successful transition, we absolutely need to have workers at the center of it.

And so I know in a number of -- if you have -- I'll put it this way and keep it general, but as a financial market participant, investor, lender, if you are properly following ESG principles, you are engaging with not just what's happening to the asset you're building, but what's happening to the communities and the workers that are being affected by that and playing a role as much as possible in supporting that. And the last point just to reemphasize, the first, best way to do this is to start early and have time to plan.

CHIEF INVESTMENT OFFICER MUSICCO: Okay. Great. That's really helpful. Maybe we could just shift slightly and really talk a bit about, you know, at Brookfield, and certainly as head of transition, you've really coined this phrase of going where the emissions are or making investments to support the businesses that are frankly the heavier emitters, so this brown to green investing. Talk to us a little bit about why is that so important and give us, you know, your views on -- you know, maybe focus a little bit on electric generation and transition from utilities. Give us a sense of where that opportunity is and why it's so important.

MARK CARNEY: So part of the -- you know, part of the reality is that we cannot -- we can -- as individual institutions, we can divest from heavy emitting industries. As a society or as the financial sector as a whole, we can't divest, or if we were to divest, we would, in effect, be shutting down the core of our economies overnight. And there would be no possibility of a just transition. And there would be large economic adjustment.

Now, the key is to find situations where we can heavy emitting industries, and I'll give an example in a moment, to get their emissions down. And if I go back again at the bigger picture to the bigger picture of the carbon budget, what we need -- remember, we have less than 10 years left on that carbon budget globally is we need to get carbon out of the atmosphere now in as many ways -- or stop additional carbon from going into the atmosphere as much as possible.

So if we go where the emissions are and accelerate the transition where the emissions are, that is one of the best ways to do it. And I'm going to give you a specific example. Forgive me, it's something we're -- Brookfield is involved in, but it is a general -- it is specific for -- it's a general point. There is a utility in Australia called Origin. It is the largest generation and retail utility in Australia. It has about four and a half million customers. It has the largest coal plant in Australia. It's over three gigawatts of coal. It has -- a number of its other power is gas fired power. It contributes seven percent of Australia's emissions today.

Brookfield is in the process of acquiring that company. And that company today -- well, we're in the process of acquiring that company. We are going to build 14 gigawatts of wind and storage power in order to shut down the coal and displace much of the gas. We will reduce by the end of this decade, 70 percent of those emissions through that process.

We are able to do that, because we will put $20 billion of investment to go and take those emissions out. Whereas, the utility today is in a position where it is paying large dividens to its shareholders, it trades -- its equity trades at a discount relative to its peers, because it has this huge problem with its emissions. It doesn't have access to the capital in order -- on a stand-alone basis in order to put that 20 billion of investment. And on its own devices, on its own resources, it -- more or less the status quo would continue.

So we're going where the emissions are, seven percent of Australia's emissions, bringing capital - we're bringing some expertise as well - accelerating the transition, taking out 70 percent of these emissions over the course -- is the intention, over the course of the next seven years, and making commercial returns on that, even though we are paying a substantial premium to the current share price that's there.

In other words -- and that's just another indication of a company that is in effect in a transition trap. It's trapped, because it can't get the capital from the public markets in order to do the transition. And so this is an opportunity -- obviously, it's a smaller opportunity -- or specific opportunity, I should say. It's a big opportunity, but it is a more general point that's happening in the capital markets. So the -- going to where the emissions are, taking those emissions out, extending the carbon budget, so that we collectively can make the broader types of investments in order to move.

And I -- we may come to this when -- I think we'll talk about regulation at some point. I'll just preview that this broad -- this approach is more broadly being endorsed through regulation so that there is support for not just -- I mean, it's hugely important to build clean energy from the ground up, but also to go to situations where for a period of time, you have to own high emission assets, coal assets in this case, a bit of gas assets, in order to make that transition to get them down.

CHIEF INVESTMENT OFFICER MUSICCO: That's really helpful. And I think, you know, as we're working through our own deep dive and study, and we'll come up with our own path to net zero, you know, thinking both through the investment lens as well as the climate risk lens, help us think through how we can be creative and move forward with some of the opportunities you just talked about. When you look at what other large institutional investors like ourselves, who are a bit earlier to this transition than we are, help give us a sense of the opportunities that are there wearing both that investment hat as well as the climate risk hat.

MARK CARNEY: Yeah. So let me -- you know, I was too long in investment -- or central bank rather, so I start with the risk side of the equation. You started with resilience today rightly.

So one of the things to recognize is that climate and climate policy is macro significant. So macro significant, I'll explain what I mean by that, which is that it affects the rate of inflation. It affects the speed of growth, job creation, and my view, the view of many others, not everybody, my view we will als affect the so-called equilibrium rate of interest, so-called r*, so the sort of resting point for medium and longer term interest rates.

Remember, a few minutes ago, I was talking about us going back to the early 2000s in level of investment relative to GDP. Well, that should push up that equilibrium rate of interest. So from an overall portfolio construction perspective, when you think about managing risk, how you think about the fixed income side, these are all considerations to take into account.

The second point is that in terms of investment opportunity I touched on the scale of investment, just the scale of, you know, the three trillion a year and the trillions in the United States, but also it goes to location of investment and the intersection of geopolitics --

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: -- and climate change. And the term friendshoring is entering the mainstream. One of the areas that is very much affected by this is clean energy. Because when a company, for whatever reason, makes an additional investment, maybe it's a new investment, maybe it's repositioning in an investment they have in China, for example, the repositioning to Mexico or Vietnam, some other country that they view that adds to the resilience of their supply chain, the first question they ask is where am I getting my power? Am I getting clean power? Because there's no point locking in a bunch of emissions once you've made that decision. So the geostrategy is coming back in.

So I'm making these points on the macro basis --

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: -- both on how you manage risk and the opportunity. But to go to the specifics and the advantages that you have, these are long duration assets.

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: In general -- many cases, I should say. In many cases, they have an element of inflation protection. Obviously, there is -- there is scale and there is the prospect with them for multiple expansion over a longer term horizon, because low -- being low carbon is increasingly an opportunity -- or, sorry, will increasingly be a determinant of country competitiveness --

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: -- and company competitiveness. You start to see that in valuations in markets. We -- our view is we will increasingly see that over time.

So the opportunity set for -- I would suggest for CalPERS it starts with just the scale of what's happening and being directly involved in that. It should, in my view, include being able to go where the emissions are and be part of this process of getting them down.

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: That's a huge social return, but it's arguably going to be the biggest financial return, because it puts capital to work. You tend to buy these assets at lower valuations because they have a problem. They have emissions. They don't have a solution. They need longer term capital in order to enact those solutions, and then provided -- and these are judgments, provided the management team is strong, they have a good plan, they have sufficient capital, then they're more competitive as companies as you move forward and you get a multiple expansion, as well as the actual commercial return on that.

So I think that -- and what we've seen -- and this is -- to be clear, you said a moment ago others have moved a little earlier. Yeah, they moved a little earlier. This is all relatively new this focus.

CHIEF INVESTMENT OFFICER MUSICCO: Um-hmm.

MARK CARNEY: And so some of the pension funds, the Canadian pension funds would have an explicit version of these strategies. They would have pools carved out for a transition strategy. Ontario Teachers in the public record has that as an example. There's other examples of that. Sovereign wealth funds like Temasek have a similar strategy. So we're seeing some of the leaders explicitly having this ability, as I say, to go where the emissions are. That is above and beyond the core opportunity that is just around the scale of what's going on.

CHIEF INVESTMENT OFFICER MUSICCO: That's super helpful.

COMMITTEE MEMBER COHEN: Excuse me.

CHIEF INVESTMENT OFFICER MUSICCO: Yes.

COMMITTEE MEMBER COHEN: Can I ask a question.

CHAIRPERSON MILLER: Yeah. Let me see if I can -- I've got several people here in the queue with questions. Yeah, so let me -- there you go. You have the floor.

COMMITTEE MEMBER COHEN: Thank you, Mr. Carney. Good morning. My name is Malia Cohen and I'm enjoying this conversation. Thank you for bringing him here today.

Two really -- two questions that come to the top of my mind, as I listen to your presentation. I want to talk a little bit -- or hear your thoughts around the importance of a national carbon tax to incentivize companies to invest in carbon reduction. Specifically, I want to know if it's politically feasible within the next couple years?

MARK CARNEY: The -- you know, the first best at -- speaking as an economist, which I am, the first best is to have a national widely applied carbon tax. It doesn't necessarily have to be at the retail level. It can be at the wholesale or company level. There -- as I'm sure, you know, there's not many jurisdictions that actually do have that. The coverage is uneven.

And so what happens is that the next best solutions come into play, such as some combination of regulation, not -- maybe I'll park that and come back to it -- and subsidies or support, such as we see support through the tax system in many cases, such as we see in the IRA. And those can be effective. They are not as neutral, if you will, as a carbon tax.

I can't -- I'm not best place to make, you know, political judgments --

COMMITTEE MEMBER COHEN: Of course you can. You're an economist. All you do is make projections.

(Laughter).

MARK CARNEY: You just proved my -- you just proved my point that I'm not best place to make the political judgment. I think the experience has been that to have support for a broad carbon tax, it is important that it is revenue neutral and that the proceeds are returned to citizens in a transparent way, that that is the case in Canada. Most other jurisdictions have some form of, you know, emissions trading scheme, which obviously we have in California and/or a more limited levy that's applied to large emitters specifically, and then appeal to subsidies and regulation.

COMMITTEE MEMBER COHEN: Okay. One more follow-up question, if I may, Mr. Chair. Thank you.

Also earlier in your presentation, you mentioned the need to retrain -- (clears throat) -- excuse me, to retrain employees, particularly those that are in danger of losing their job in this transition. I'm curious to know what your thoughts are around AI? There's been a lot of conversation talking about artificial intelligence and I want -- do you see AI a part of this transition or the impetus of this transition?

MARK CARNEY: Yeah, it's a very good question. I'd answer it the following way. One is that there is -- as in many industries, there is real potential for AI to be -- well, I'll speak specifically about this issue. There is real potential for AI to be part of the solution, not the solution, and specifically around there are existing technologies, which is used -- which are using machine learning -- relatively primitive in the broader scheme of things, machine learning, for example, applied to HVAC systems, and district -- particularly district, you know, heating ventilation, air conditioning systems, particularly if there's district real estate. And the optimization there of those systems across buildings tends to be in the 20, 25 percent range of savings.

Similarly, some of the big tech firms in their server farms Google would be -- is on public record, again, their use of AI and they have one of the leading AI platforms obviously, has been on the order of 25 percent savings of energy. So the use of AI on the -- so to help on the demand side can be tremendously helpful, and expect that, as with any new technology, that we're going to see a number of new opportunities.

On the other hand, let me -- I'll just point out that AI uses a lot more compute -- computing power and generates, as a consequence, and this is what we are seeing as we meet today, with the major tech companies is generating additional demand for clean energy, because they're all committed to have for their data services, them to be zero carbon.

You asked a very deep question, which is probably the other component of this, which probably merits a stand-alone session on its own, which is the impact of AI on the workforce and what the history has been with transformative technologies and that. The history, for what it's worth, and if we are in the fourth industrial revolution, because of climate and AI, and I would say we are, the history in the other three has been in the end the labor force returns to full employment, but that's in the end. There is a period of dislocation and disruption, which might be more accelerated in this case, and the -- what happens -- what has tended to happen in the past is a number of our social institutions are -- you know, we update them to the realities of the new technologies, so people are -- have the skills to fully exploit them. There's an argument to say we should be doing that now in anticipation of what's going to happen.

COMMITTEE MEMBER COHEN: Thank you.

CHAIRPERSON MILLER: Okay. Thank you.

Continue, Ms. Musicco.

CHIEF INVESTMENT OFFICER MUSICCO: Okay. Great. Thanks. Why don't we -- I'd like -- why don't we pivot, because we've started talking a little wee bit about regulatory, policy impact. And then I want to make sure we finish off with thinking about -- you know, we're humble enough to know we need help with smart friends. We need to leverage investment managers and I want to get in the weeds a bit on how do we generate alpha with these types of opportunities? How are managers like Brookfield differentiating themselves and using ESG frameworks as an example when you make investments?

So just to give you a lay of the land so you know where we're going. If we could touch a little bit more on regulatory, policy, and touch on IRA, and then we'll closeout with the opportunity set right in front of us to work with partners like yourselves.

MARK CARNEY: So I alluded to this a moment ago around regulation, and I mean climate regulation first and foremost. And one of the things -- so let's say we're in a world where we don't have a carbon tax or a carbon price of some form. And that means that the climate policy interventions are largely regulatory, at some point, you can't do something, or can't emit as much in your given industry, and/or support for activities through the tax system, support -- positive support through the tax system.

A key point a meta point, if I may, is that if you have a forward looking financial system that is focused on climate and climate transition, it is incredibly powerful if you, as a country or a state, can put in place regulatory requirements at some point in the future that's far enough off that you can do something about it, but close enough that you have to start.

And the examples of this would include a ban on internal combustion engine vehicle engine sales in 2035. A number of countries have put that in place. The impact -- you see it in the UK. You see it in Europe. You see it in Canada. The impact of that has been almost instantaneously investment of the auto companies in the production -- in the value chain, the production of electric vehicles. Now, that's been supplemented by support for the purchase of those vehicles in some jurisdictions, but you see that dynamic there.

Another example is clean grid. Commitments to having a clean grid or a substantial reduction in emissions by a certain date. Again, 2035 is about the right horizon. It's not tomorrow, but it's the day after tomorrow in terms of these facilities and that drives -- that drives activity very much.

The -- I'll stay with climate policy, then I want to make two points on financial -- or two or three points on financial policy, because it's crucial. So the key issue is the interplay between climate policy being credible, predictable. Closing that gap between the objectives of 50 percent, for example, of the United States, and where it's policy is, credible and predictable, and a forward-looking financial system that has the information that it needs to get it done.

The IRA is described as a big deal, very -- in various ways. It is bigger than a big deal. It is a transformative piece of legislation. It is having major impacts not just here in the United States, but as intended in the United States, something on the order of 200 billion of identified investments since the passage of the IRA. Reasonable estimates suggest that it could catalyze up to three trillion in total of investments -- $3 trillion in total of investments over the course of the next 10 years. That's an enormous number. It is a necessary number in order for the transition.

It's advantages are that it is simple as these things go. The core support mechanisms are through investment tax credits and production tax credits. There's other -- there's some tweaks around that, but it's straightforward. It is -- it allows for companies to monetize, if I can put it that way, their tax credits, if they don't actually need the tax credits. So that provides support to all companies, whether they're currently tax paying, or if they're starting out and they're not making a profit, not paying taxes, so it provides support.

It provides relatively consistent or relatively flat support across different technologies, so wind, solar, nuclear. It provides very favorable terms to emerging technologies that really do need to scale, particularly hydrogen and carbon capture. Carbon capture a huge opportunity. It's an existing business here in

California and a huge potential expansion, and again something that in a world where we have a shrinking carbon budget, and you can actually take some of the carbon out, a huge advantage.

So the IRA is simple. On top of that, it has a characteristic which is stackable, the terminology, incentives. So in other words, the incentives are bigger if the components, for example, of clean energy are manufactured in America or they're manufactured with union labor, other components, which -- and it depends. It's not -- but -- and so that can provide further incentives that's driving the scale of investment.

The rest of the world is responding to this by trying to level up to the IRA levels of incentives as much as possible. Most countries do not have the resources of the United States. They don't have as big domestic market. And if, for example, in the case of Europe, they have a much more complicated governance structure, so they can make a decision at the European level, but it doesn't all filter down to the national level, so they have fewer opportunities there.

I've run out of time, haven't I?

CHIEF INVESTMENT OFFICER MUSICCO: No, you haven't. I just -- I wanted to -- we have a couple extra minutes, just because we brought on questions.

MARK CARNEY: Yeah.

CHIEF INVESTMENT OFFICER MUSICCO: Let's take that to the local level and kind of tie it to like what could we be doing to help, you know, move states like California to accelerate the transition and work with partners like yourselves and kind of tie that into my comments around we need to generate alpha at the end of the day, so we're again thinking through both the risks and investing and how we leverage partners like yourself.

MARK CARNEY: So one of the -- one of the most important things for climate action making progress on this, making California as a state more competitive, America more competitive, the companies here more competitive is -- and to have the political -- small "p" political support is action on the ground, right, local action, solutions here as opposed to solutions elsewhere.

And so some of the -- some of the bigger opportunities in California relate to the electricity system, the generation system, and particularly how all of this new clean energy that's being built interacts with the grid, because we need to get it from where it's being produced to where it's needed. And historically, and this isn't just the issue with California, it's a global issue, but grid regulation, grid investment is very slow moving. It conservative. You wait until somebody builds something before you even think about how you're going to connect it to the grid as opposed to recognizing that there is this wall of clean energy that's coming and can be connected, and again be connected in quite an efficient way. So engagement on that level incredibly important.

How do you generate alpha on -- in this? I think the first way is just recognizing the scale of the trend. We are absolutely at an inflection point in the scale of this investment. I'll give you a point there and I'll make a point on valuation.

Five years ago, there's about half a trillion dollars globally invested in clean energy. Last year, 1.1 trillion. This year on course for 1.7 trillion. So it's more than tripled over the course of the last seven years. It is bigger than the investment in fossil fuels. It needs to get to a four to one ratio relative to fossil fuel investment by the end of the decade, but it's tracking towards that. So just being part of that is a way to generate alpha at the core.

Secondly, it is -- it is the case that valuation levels for low emitting companies within a sector, they trade at a premium to higher emitting within the sector. So I'm not talking about an auto company versus a tech company, but within the sector, and that those valuation premiums have been growing over time, sort of total enterprise value relative to cash flow, so called EBITDA.

The biggest alpha, to back to something we talked about earlier, is going to be generated obviously in identifying those companies, being behind those companies, but identifying those that are high emitting today that can move towards being low emitting tomorrow, just like an underperforming company financially to better performance. And the correlation between that emissions performance and the financial performance is very strong.

CHAIRPERSON MILLER: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: That's great. I think we'll -- I think we should transition to taking questions, but first I just want to say thank you. We're really excited about the partnership that we have formed with Brookfield. We're, you know, delighted to hear that there is opportunities right in our own backyard, which will have both a financial and social impact for our state. And we'll just look forward to learning alongside smart friends like yourselves as we lean right into this with the rest of the world. So thank you again for your leadership in that, but also for your partnership.

So maybe, Chair Miller, we could move now to questions and the floor is open.

CHAIRPERSON MILLER: Thank you. You've anticipated my interruption there as well. We'll switch to kind of questions. So we've got a number of Board members with questions and then we'll also have some public comment on this item. So I'll call on President Taylor.

VICE CHAIRPERSON TAYLOR: Thank you, Chair Miller. Mr. Carney, thank you very much for coming. This was really, really lots of information, very meaty, and just left more questions in my head, so I'll try to get to a couple of them. And I'm going to be cognizant of the fact that you are not from America, so I'm trying not to ask you American-centric questions.

So I'll do it through the financial market. So you talked about appropriate ESG investor is going to take into account the worker community. So can you kind of give me an idea of like, for example, the one-year talk -- the investment you're talking about how you would engage your work force to make, you know, appropriate transitional changes -- just transitional changes for those workers.

MARK CARNEY: Yeah. Thank you, President Taylor. So in the -- in the case in Australia, for example, we are looking to site much of the generation -- the new generation, the wind power generation where there's existing facilities, so therefore in existing communities. That's one example.

Secondly, laying out, as I said at the start, the timeline for those investments and being clear what we intend to do, working with local unions as is the case, which doesn't have universal coverage in the -- but has broader coverage. And also considering -- and it's considering and we're on the public record that we're considering this is whether or not it's possible to partner to develop some of the manufacturing capability for -- I mean, we're -- this is a huge amount of renewable power that's going to be put in place. So develop within Australia the manufacturing capability, that then would feed into that and therefore be creating jobs accordingly, also has the advantage of greater security as supply, resilience, and all ancillary benefits as well.

VICE CHAIRPERSON TAYLOR: So -- and as you are considering that, so this would be a new -- creation of new jobs, you will -- can I assume that you will support freedom of association if those folks decide to do that type of thing?

MARK CARNEY: Yeah. I mean, consistent with the labor market practices in Australia, yeah.

VICE CHAIRPERSON TAYLOR: Okay. Okay. And then I was a little curious, you talked about the transition strategy and how this -- we're -- how many -- I guess what I'm trying to ask is how many companies would be doing what you're doing, because here in the United States I'm see a lot of companies not -- they're just investing more in fossil fuel. I'm not seeing them buy a fossil fuel company and moving it towards -- and I'm not seeing the fossil fuel companies moving themselves towards the energy transition, right. So how, as a business leader, do you convince them to do this?

MARK CARNEY: Yeah. Well, part of -- I mean, ultimately, the way you convince them is by creating a tremendous amount of value and nothing succeeds like success. So the examples of that value creation brings a very welcome imitation. Quite frankly, we need a lot more capital to move into these types of strategies. We are seeing it with the leaders. The leading pension funds and asset owners are moving towards these strategies. We need more of the asset managers and companies themselves to pursue the -- pursue this strategy.

I think we're going to see that for a couple of reasons. One, as I say, proven success. I'll give you figure, if I may, which is -- forgive me, most -- my example again from Brookfield, but we raised a fund $15 billion a year ago, closed it. The largest impact fund ever raised by an order of magnitude. That fund is now all committed. So we have invested in effect all of that funding, including that investment in Australia. That fund will take out the emissions equivalent to New York City, the annual emissions of New York City. So that's impact -- and earned commercial financial returns. And that's an example that just show -- and I would say as well with that strategy, we have -- currently, we're looking at transactions, but obviously won't do all these transactions, but we're looking at transactions higher than $90 billion in our backlog that they're not all the business transformation strategy, but many of them are.

And so how this moves is partly through success and one other way, if I may, which is that because a number of financial institutions, including all the major U.S. banks and a number of their asset managers and others, insurance companies, are looking to support companies in the transition. What they are committed to do is to ask companies for their plans for the transition. I can't decide who to support until I've asked them the question. I've engaged with them and determined who to get behind to get the emissions down.

And to be clear, this is a very different strategy that's being pursued than a divestment strategy, which is saying there's an industry, or a sector, or a region that I'm just not going to engage with. It's going to find who is being part of the solution and getting that -- getting the capital around it.

So it's moving -- it's moving quite rapidly, but in anything of this magnitude, it -- you know, the leaders are small relative to the scale of the problem at this stage, which means opportunity obviously.

VICE CHAIRPERSON TAYLOR: Thank you. And then lastly, and I hate to do this, but how do you think this anti-ESG movement taking place in the United States will impact this overall?

MARK CARNEY: I think the -- as you would know better, it's -- there is a broader -- there's a broader narrative that if I -- if you will around so called anti-woke, you know, approaches that is broader than -- in the financial sector broader in the economy, so obviously, I'm not going to comment on that.

What we're talking about today, the core of this, this is the "E" in the ESG, so it's about energy. And actually it's a subset of the "E", it's the most important one, which is the energy transition and movement to net zero. All of this -- none of this is subjective. It's all hard numbers. What are your emissions today? Where are they going tomorrow?

You know, we look at company cash flow today, company debt, company profit, and where is it going tomorrow? And CalPERS makes judgments about those to make the returns for California pensioners. And this is absolutely -- it's both measurable and it's similar judgments, and these are judgments that are going to minimize risk, if you get them right, minimize risk and maximize opportunity.

VICE CHAIRPERSON TAYLOR: Thank you.

CHAIRPERSON MILLER: Thank you.

Next, I had on my list Director Pacheco. If you hit your button there, I'll bring you up.

There we go.

COMMITTEE MEMBER PACHECO: Thank you. Thank you very much. First of all, thank you, Mr. Carney. I really appreciate your comments. And listening to your commentary has been very enlightening. So I want to ask you a question back to the question of origin. I believe you mentioned that in your company, and I -- and the model you had there. And, you know, I'm curious how is -- how you plan to scale? I mean, what -- how do you envision identifying and sourcing these companies, especially these high emitter companies, you know, over the world and to find the returns that we need, basically the alpha in the context of like the geopolitical issues that are going on around the world? So it's -- you know, we have to, I mean, consider -- the consideration of China, for instance, and for the Ukraine war and so forth, and I'm just wondering your view on that. If you could perhaps elaborate on that, sir?

MARK CARNEY: So I'll take it in reverse order. They're obviously related. The big lesson that countries are taking from certainly in Europe those most affected from the war is the need to accelerate the energy transition, because in the end nobody owns the sun and wind and, you know, hydrogen is everywhere. And the only geopolitical risk you're taking is during the construction, you know, the sourcing of the windmill, if you will, or the solar array. And so there has -- that's one of the reasons why there has been a marked acceleration in transition investing there.

In terms of sourcing those opportunities, if I speak just from a Brookfield perspective, we have a 120 investment professionals who work on transition. We are -- we have 3,500 operating professionals in renewable energy, clean energy on all continents with teams on all continents, so we have, you know, direct sourcing from that. And we -- we have scale as well and ability to bring very large amounts of capital and quick execution. So while we're going out and looking for these opportunities, a number of these opportunities are coming to us.

COMMITTEE MEMBER PACHECO: Wonderful. And then -- and you also mentioned -- in that same conversation, you mentioned the risks associated with that and you mentioned, I believe, your thoughts on this micro significance I believe on the -- on the interest rate. And how is that -- I mean, how does that play into the whole? Because, I mean, is -- do -- we would have to -- would -- monetary policy would have to change at the Federal Reserve level? I mean, I'm just trying to understand that process, sir.

MARK CARNEY: Yeah, thank you -- thank you for asking me to clarify. What I'm speaking about is not -- I'm speaking about longer term interest rates, the average resting place for longer term interest rates. And I'm sure you've had discussions and probably will continue to have discussions about so-called secular stagnation --

COMMITTEE MEMBER PACHECO: Right.

MARK CARNEY: -- and the forces that have pushed down on longer term interest rates. I'm going to simplify, but it's useful to simplify.

COMMITTEE MEMBER PACHECO: Yes.

MARK CARNEY: In effect, we're talking about the level of savings and the level of investment. And broadly speaking, over the course of the last 25 years, until very recently, there are lots of reasons why savings went up. Demographics was one, risk aversion was another, and a number of reasons why investment went down globally in aggregate, more tech, less hard investment, et cetera, less public investment.

Now, both of those to a degree are moving in the opposite direction. And one of the more material elements of the big investment boom - we're headed into, I think, a multi-decade investment boom - is the energy transition, just the scale of it. And that dynamic moves up the average level of interest rates. So it's the level of interest rates at which the economy clears, if you will. And it's been compressed for a long period of time --

COMMITTEE MEMBER PACHECO: Yes.

MARK CARNEY: -- which is why the Federal Reserve could have interest rates very low for a long period of time and no inflation. Then things start to change and that strategy doesn't work anymore, so that's -- this is another manifestation of that. As a pension fund, obviously, it matters hugely --

COMMITTEE MEMBER PACHECO: Yes.

MARK CARNEY: -- where longer term interest rates are going to be. And so judgments about the speed of this transition, this order of magnitude is important for overall risk management here.

COMMITTEE MEMBER PACHECO: Thank you very for that comment. That's actually very clarifying. Thank you, sir.

CHAIRPERSON MILLER: Okay. Next, I have Director Middleton.

COMMITTEE MEMBER MIDDLETON: Mr. Carney, thank you. And I greatly appreciate the context with what you're giving us that we're in the midst of an energy transition. What, in your mind, are the biggest impediments to that transition and what can we and other institutional investors like CalPERS do to accelerate the transition?

MARK CARNEY: I think the -- until recently, the biggest impediments were that governments weren't really taking the transition seriously, so -- you know, collectively they weren't taking it seriously, so policy was not strong enough. It wasn't clear enough. And it wasn't clear whether policy would go two steps forward and then two steps back. That is -- that is less of a risk, but it is -- you know, it continues to be a risk. And I think to the extent to which CalPERS is active as an investor and informed about the policy impediments to effective transition or cases where there's extreme uncertainty and that prevents you from investing, that is highly, highly relevant information for whether it's at the State level, municipal level, or the national level. And we referenced one issue, which is in and around the grid, which is a huge issue for California. It's a huge issue elsewhere as well.

So I would -- I think that feedback is there. I think as well, if I may, to the extent to which you use -- when CalPERS interacts with financial institutions, it is a reasonable expectation that those financial institutions, given how big this issue is, that they know not just their own carbon footprint, but the carbon footprint of the companies they're lending to and investing in. They should know over time and ideally relatively soon whether or not those companies have their own transition plans, if they're high emissions, how they can get them down. They should have that information and be managing the risks, ceasing those opportunities as much as possible. So you have obviously tremendous influence there, but you also receive those judgments. And if those judgments aren't well informed because the bank or the asset manager isn't focused on this, ultimately, that will rollback into your portfolio.

COMMITTEE MEMBER MIDDLETON: We get a lot of attention to the supply of raw materials as we're talking about the transition to electric vehicles, but I didn't hear you talk about raw materials or anything else in that area as you were describing the energy transition. So to what extent are there simply physical barriers that will slow us in that transition? And if they're less, doesn't that -- doesn't that really tell us that we can move much faster than some people believe we can in this transition?

MARK CARNEY: There are -- anything of this speed has choke points, choke points on permitting, and, yes, choke points as well, or log jams, in terms of raw materials. So the -- it's electricity, so the need for copper goes up, you know, several-fold. The need for lithium -- I mean, the simi -- there's some of the similar rare earths are relevant to solar arrays, and certainly battery storage, which is part of stabilizing grids as in the EV world.

So -- and that intersects, if I may, with these issues -- these geopolitical issues, because at least at present, a lot of the production of some of these key materials is in China. Now, a lot of the production of these key materials is in China, because China is focused on it.

COMMITTEE MEMBER MIDDLETON: Right.

MARK CARNEY: Now, we're focusing on it. The resources in the United States, the resources in Canada, the resources elsewhere can be developed. Yes, they will be a bit about more expensive, but they'll be a bit more expensive in -- they are a relatively small component of the overall cost of this energy and they'll be, you know, a bit more expensive and there's -- you know, the market will lead to people finding more of it. And so I think with -- as a general point is that the transition will throw up a series of challenges, and then the focus will go on addressing those challenges.

COMMITTEE MEMBER MIDDLETON: Thank you.

CHAIRPERSON MILLER: Okay. Next, I have Director Walker.

COMMITTEE MEMBER WALKER: Okay. Thank you.

VICE CHAIRPERSON TAYLOR: You just turned it back off.

COMMITTEE MEMBER WALKER: Oh, did I.

CHAIRPERSON MILLER: Hit it again and I'll -- this thing is a little tricky. There you go. Let's see if that -- there, that should do it.

COMMITTEE MEMBER WALKER: Sorry. So thank you. This is very enlightening. I just want to start out by saying -- and I'm relatively new to the Board and investments is not my area of expertise. So I appreciate the fact that you made it easy to follow. So I have a couple of questions.

One is -- and you talked about it in the beginning and I just want to make sure that I'm getting it about the opportunity and the risks. And I wasn't clear that I captured the risks that you were talking about.

MARK CARNEY: Yeah. So there's -- there are two main types of risks related to climate. And the first is just the physical impact of climate change. And so CalPERS will have a lot of real estate for example. Is it coastal real estate, is it going to be affected by literally the increase in extreme weather events, and how to think through the portfolio from that perspective.

In some cases what we've seen as well is supply chain risks. There's a greater appreciate that actually supply chains affected by extreme weather as well as geopolitics, and pandemics, and other aspects, so building resiliency into that. So those -- that's the physical aspect of it.

But the point I was trying to make is that there's also the risk of what's called transition risk. So it's the risk of -- we're moving from one energy system, if I stick with energy, to a new energy system. And through a combination of consumer pressure, government regulation, government subsidies, such as in the IRA, technological change, all of these factors, it becomes at the speed with which we move can catch some companies out. And those companies that are caught out will have higher carbon, higher emissions. They won't have moved their business model as rapidly, as necessary. And if you are lending to that company or own the equity of that company, you've got transition risk and you bear -- you bear the brunt of that.

So -- and it's determining who has that exposure and where it goes. I'll give you a big example of it, and close on that, which is that if we go back to the carbon budget and burning, for example, oil and gas, is a big contributor ultimately to the carbon budget - no surprise - the known reserves of oil and gas, just what we know around the world, you know, we can only harvest less than half of those and stay within the carbon budget.

So somebody is going to be left, if we do the transition, holding the bag. Having a lot of assets on their balance sheet, their reserves, they can't be used. And so the question is who has those, and how much exposure do you want, and how to think about which reserves will be used, which companies in the energy sector - I'll be specific about it - are using their cash flows today to transition themselves to produce the energy of the future and therefore have low transition risk or which other ones are not going to make it. And it's very often that incumbents don't make it when you have a big disruption, and is it -- are they priced, you know, appropriately as -- when you have exposure to them, if that helps.

COMMITTEE MEMBER WALKER: Thank you.

And then -- just a minute. So we talked -- you talked about the -- a fair economy and creating the balance, right? And so -- and to put like so it makes sense in my head. So I think in terms of like California, we're going to go to the non-gas cars by 2035, right? And so when you think about it, you think about -- when I think about it, I think about so do we have enough charging stations? Do we have the people that can prepare the cars, right? Do -- you know, they produce lithium in the Salton Sea, so are we going to be able produce -- and apparently it's green. Who knew?

So at any rate, so that's how I think about it. So then when we think about training the worker economy, right, because I thought I heard you correctly say that for every time we've come to this point in our evolution, right, we lose -- workers go down, because, you know, you've got this new technology, new whatever. And so how can we as a fund help to make sure that we're looking ahead and training ahead, so that it's not as big of a hit? It's going to be a hit regardless, but it doesn't have to be as large, since we know it's coming.

MARK CARNEY: And I -- just for clarity, I was referring -- when I referred to -- every time in history when you have transformative, it was emphasizing more the AI revolution, if you will.

COMMITTEE MEMBER WALKER: I get that. I get that.

MARK CARNEY: Yeah. And so -- because actually, for -- you know, then always -- the jobs are not always in the same place, but --

COMMITTEE MEMBER WALKER: Right.

MARK CARNEY: -- there are more jobs in the transition than there are in the existing energy economy. So in the construction and the development of this for a period of time, we will net create jobs. But part of the fairness is where are those jobs and how do you -- how do you -- how do you build that out? How can CalPERS support that the -- I think part of the question -- this is not going to be a perfect answer.

COMMITTEE MEMBER WALKER: Right.

MARK CARNEY: I mean, there is a question in terms of if you're involved in a specific situation where you're an active investor, a private investor, if you will, in something around the transition, obviously is due diligencing it, seeing what the plan is for the existing workers helping them transition themselves ideally into the new entity would be part of it.

I think more broadly, there is a -- there is a question about an investment strategy that takes advantage of the technology to create new jobs or is part of what will become, assuming AI continues to develop, which it very likely will, will be -- I mean, we will need, in my judgment, you know, quite large institutionalized training, mid-career training across our economies to take advantage of this technology, as opposed to waiting for people to be displaced by it and then just the next generation filling into it.

COMMITTEE MEMBER WALKER: Okay. And then my last question is, since I've been on the Board, I've heard some conversations about should we have investment principles as we're looking at going forward for the companies that we're going to invest in? And I thought I heard you say that, you know, like as we go to invest -- as you go to invest, like you'll know a company whether they have the right policies and things that they're tracking to make them a good partner to invest in.

MARK CARNEY: Yeah.

COMMITTEE MEMBER WALKER: And would it be beneficial for CalPERS to have the principle -- to have some principles. I don't know what they are.

MARK CARNEY: Yeah. I think an expectation that companies, particularly larger companies, which is the type you would invest in, that they have a plan for the transition. Put another way, if they're an American company and the intention of the United States, which it is, is to reduce emissions relative to 2005 levels by 50 percent by 2030, the question is, well where do you -- how do you fit into that? We're not talking about some far off distance, but what are you doing as a company that would be broadly consistent with it? And then having that answer will help inform as other factors will the investment decision of CalPERS, yeah.

COMMITTEE MEMBER WALKER: Thank you.

CHAIRPERSON MILLER: Okay. Thank you, Mr. Carney. We really have really enjoyed the discussion and appreciate your insights. And just a quick final question I have before I go to the public comments. How do you view -- when we look at their -- I've heard people say when it comes to, you know, the majors in the energy industry, you know, that there's kind of the good, the bad, the ugly, and everything in between. Currently, with current business models, practices, politics, geopolitics, so how do we grapple with having the diversity that we need in our portfolio going forward when we look -- you know, what role are they going to play in this transition, will they be the villains, will they be the good guys, will we have to pick and choose, so when we think about the really big players in the energy economy?

MARK CARNEY: Yeah. I think the answer is perhaps unsurprisingly you'll need to pick and choose and make an informed decision. And I'll just make a couple quick comments in terms of those judgments.

For the world and United States to be on the path to address this issue, the one and a half degree path, the ratio of clean energy investment, so wind, solar, hydro, nuclear, you know, clean energy, to fossil fuel investment, that ratio needs to go from where it is today, which is about 1.1, that needs to go to about four to -- four to one by the end of this decade.

And by the way, it was 0.5 as I said I think earlier several years ago. So it's moved a lot, but it needs to continue to move up. And so the question for an energy company is what's your ratio and where are you moving to? Now, at present, the energy companies -- the major energy -- many of the leading energy companies, that ratio is about 0.3, maybe 0.5, but it's no more than that.

And their plans are to get it to around one to one by the end of the decade. And that may be a judgment about -- that they will be growing market share in a decreasing market share of energy, or providing energy security or somehow, but that's part of where the conversation starts. And by the way, those energy companies at present in general are paying out substantially more of their cash flow as dividends, or share buybacks, or debt repurchase, than they are investing.

So it's a way to frame that conversation around their strategy. It doesn't mean that you -- you know, say no, I will invest in no energy company, but it's where are you moving on that -- on that solution? And it goes back to the transition risk conversation about, well, what's the horizon over which this company will be competitive in the energy sector, because the energy sector is changing very rapidly and are they building up the expertise for the energy sector of the future? And look, some of them are to be clear, and -- but you'll make judgments about which ones those are.

CHAIRPERSON MILLER: Great. Thank you very much.

Okay. At this point, we'll move to I think public comments. And so I'll be -- thanks again -- so the first public commenter -- and each commenter will come down. You'll have a microphone. You'll have three minutes to speak. If you have a translator, you'll have six minutes. And our first commenter is Alyssa Giachino. And if you'll introduce yourself and any organization that you're representing and the time will begin after you start to speak and your time will appear up here on the clock.

ALYSSA GIACHINO: Okay. Can you hear me?

CHAIRPERSON MILLER: Yes. I'm not seeing our clock though.

There we go.

ALYSSA GIACHINO: Okay. Good morning, Chair and Board members. Alyssa Giachino with the Private Equity Stakeholder Project. We appreciate today's conversation on sustainability. This Board and investment staff are examining the risks and opportunities around the energy transition. We look forward to further dialogue around ensuring that private asset managers are aligning with emissions reductions targets and a rapid energy transition.

The Carlyle groups, billions invested in fossil assets, have dumped an estimated 277 million metric tons of CO2 and other greenhouse gases into the atmosphere from 2011 to 2021, contributing to the global climate crisis and harming low-income communities and communities of color on a disproportionate basis. CalPERS is one of Carlyle's most important investors with over a billion committed in just the last five years. Recently, Carlyle has struggled with both executive turnover and attracting LP commitments.

Carlyle stands out among private equity firms as having one of the largest energy portfolios, with approximately 22 billion in carbon based energy and by comparison just 1.4 billion to renewables, less than one percent of assets under management. These are the findings of a report by Americans for Financial Reform, Global Equity Monitor, and the Private Equity Stakeholder Project, providing previously unavailable data that can serve as a resource to investors like CalPERS. Given the private equity industry's intrinsic opacity, the report's findings likely understate the extent of Carlyle's carbon footprint.

With Carlyle's new CEO at the helm, the firm has the opportunity to redefine its direction on energy and adapt its investment strategy to align with the UN IPCC's 1.5 degree Celsius recommendations.

Key findings in the report include Carlyle is one of the largest owners of gas-fired capacity in the U.S. rivaling giants like the Tennessee Valley Authority. Pollution from Carlyle's current fossil fuel burning power plants are emitted overwhelmingly in communities where residents of color and/or low-income communities -- sorry, low-income residents live in higher concentrations. Close to half of Carlyle's fossil fuel plants have a record of environmental violations under its ownership. Carlyle's held a majority stake in NGP Energy Capital since 2012, a firm that primarily invests in oil and gas drilling.

For a credible brown to green strategy, Carlyle has the responsibility to be transparent with its investors and the public about the impacts and risks of its energy portfolio. Carlyle is raising several funds this year. Before committing any new capital, CalPERS should ask Carlyle to disclose publicly all energy investments and environmental impacts including Scopes 1, 2, and 3, as well as how it will align its full portfolio with a 1.5 degree pathway.

Thank you so much.

CHAIRPERSON MILLER: Thank you.

Oh, Director Walker.

COMMITTEE MEMBER WALKER: Could we get a copy? I noticed she wrote out her -- I noticed your comments were written. Could we get a copy of that, please?

ALYSSA GIACHINO: Sure.

COMMITTEE MEMBER WALKER: Thank you.

CHAIRPERSON MILLER: Thank you.

Next, we have Ivana[SIC] Figueroa.

Okay. Come on down and introduce yourself and your time will start when you begin to speak.

JOVANA FIGUEROA: Hello, everyone. My name is Jovana Figueroa. Thank you for the opportunity to speak to you today. I, Jovana Figueroa, have been an Amazon driver in Palmdale for two years. I was hired by Battled-Tested strategies, which is an Amazon subcontractor. Amazon controls every part of my job, but uses subcontractors so it won't be held accountable for our working conditions. My co-workers and I organized a union this year to protect our safety and to get the pay and benefits that we need to support our families. Amazon has made it possible to address these problems. We are still living paycheck to paycheck, and we are still in danger on the job every day.

We need your support to protect the rights of Amazon workers. We deliver packages in the high desert. I've had to work in 107 degree heat and my Amazon van didn't have air conditioning. Sometimes Amazon won't even give us water. I felt closed to fainting on the job. I've been sent out in heavy fog or in the dark in a van without working headlights. I've been sent to make deliveries on dangerous unpaved mountain roads. If we refuse an unsafe delivery, Amazon can punish us.

I support my two children by myself. Amazon wages are so low that I have to work two other jobs too. I don't have time for my kids. I miss my 14 year old's sports and school activities. I don't have the time I want with my four year old just to teach her the things so she can develop into a person I want her to be.

CalPERS supports workers rights. CalPERS policies say that you will talk to companies that you invest in and how to treat their workers. The policies also say that the companies you invest in should respect everyone's right to form a union. We need your help with Amazon. Amazon is violating your policies by endangering us, underpaying us, and violating our rights to form a union.

We are asking you in your fiduciary duty to contact Amazon. Tell Amazon to respect our rights. Tell Amazon to treat us fairly. Millions of California workers and retirees depend on CalPERS. These advancements won't payoff if they come at the expenses of Amazon workers. My co-workers and I are standing strong. Last week, we went on an unfair labor practice strike against Amazon's violations of labor law. We are fighting back and I hope you will stand with us. Thank you all kindly.

CHAIRPERSON MILLER: Thank you.

Next, we have Ty Hudson. Come on.

Okay. And when you introduce yourself and start to speak, your time will start.

TY HUDSON: Good morning, Mr. Chairman and members of the Investment Committee. My name is Ty Hudson. I'm the Research Director of the Hospitality Workers Union, Unite Here, Local 2.

We appreciate CalPERS' attention to climate change and efforts to be part of the solution. Many of our members come from the communities most at risk from climate change, both here in the U.S. and in their home countries around the world. And we appreciate Mr. Carney's global efforts to promote transition investing. However, a reality check is in order when it comes to the track record of Mr. Carney's own firm.

Brookfield has cultivated an image as a leader in green investing, but the reality is more complicated. Despite Brookfield's very public emphasis and transition investing, it's affiliates have made billions of dollars of new investments in fossil fuel infrastructure, including oil sands pipelines in just the last three years. Some of Brookfield's portfolio companies are planning major expansion of fossil fuel infrastructure, including pipelines in what is already one of the world's largest coal export terminals.

Brookfield claims its net zero commitment is based on the Paris aligned net zero investment framework, but it contravenes that framework by allocating additional capital to oil sands and thermal coal infrastructure. It talks about going where the emissions are in order to invest in the transition away from fossil fuels, but it's hard to imagine how the expansion of gas pipelines and coal terminals fits into that strategy.

Brookfield touts its net zero commitment, but its initial targets reported last year to The Net Zero Asset Managers initiative cover only 33 percent of its assets under management. Furthermore, we're concerned that the way Brookfield reports on its progress toward net zero is not fully transparent. For example, it declines to disclose most of its Scope 3 emissions, including the emissions from the coal, oil, and gas that are transported through infrastructure it owns.

The Task Force on Climate-Related Financial Disclosures, or TCFD, recommends disclosure of material Scope 3 emissions. Brookfield says it's aligning its practices with TCFD recommendations, but claims to lack quality data on Scope 3 emissions. Frankly, it's hard to believe that Brookfield could not estimate the emissions from the fossil fuels transported through its own infrastructure assets.

Finally, even Brookfield's flagship renewable energy affiliate, Brookfield Renewable, is invested in fossil fuel infrastructure, including oil sands pipelines, which it does not disclose in its SEC filings. It's investor brochure refers to Brookfield Renewable as a pure play renewable energy investment. Brookfield's lack of transparency threatens to undermine the efforts of climate conscious investors such as CalPERS and many others. In addition to yourselves, we've begun to reach out to other public pension funds that have commitments to sustainable investing.

Our forthcoming report, *Brookfield Climate Reality Check*, is intended to help institutional investors do their due diligence. We appreciate CalPERS' efforts toward aligning its investments with California's values and we trust you will insist on transparency from your asset managers.

Thank you.

CHAIRPERSON MILLER: Thank you.

I don't see anymore public commenters for Item 6A in the room.

Is there anyone else?

Okay. We'll go to our phone callers. I think we have at least two callers to comment on Item 6A.

Mr. Teykaerts.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Good morning, Chair Miller. We do have two callers. We'll start off with Melissa Reyes.

Go ahead, Melissa.

MELISSA REYES: Hello. Good afternoon. Thank you for taking my comment today. My name is Melissa Reyes. I'm a lead organizer for the IBEW in the Carolinas. And I'm calling today to bring attention to an organized drive in Hopkins, South Carolina at the Columbia Fuel Fabrication Facility now owned by Brookfield Renewable specializing in the production of nuclear fuel rods.

Nuclear energy will play a large role in clean energy and sustainability thanks to advances in technology making the production much safer. In this quest for a net zero planet, it's important to remember the workers making this possible. Workers at the Columbia Fuel Fabrication Facility are pursuing a union in their workplace. And we ask your firm and management at the Columbia Fuel Fabrication Facility respect their federal right to organize free from intimidation and retaliation. They simply want better conditions for themselves and their children who may find themselves working at Westinghouse one day.

The workers in their sister plant Blairsville, Pennsylvania have enjoyed union representation for nearly seven decades. And the workers in South Carolina should be allowed to make an informed decision as well. I am not saying that, you know, this is coming from Brookfield directly, but it should be -- the management at the Hopkins facility should me made known what the rights of the workers are and they should be respected.

Thank you.

CHAIRPERSON MILLER: Okay. Thank you.

Next caller.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF

TEYKAERTS: Chair Miller, next we have Sara Theiss from Fossil Free.

Go ahead, Sara.

SARA THEISS: Hi. Yes, I'm Sara Theiss and I'm a grateful CalPERS retiree and member of Fossil Free California.

Mr. Carney, I really appreciated your presentation today and your strong support of corporate carbon disclosure and accountability from your role in setting up the TCFD to your present role as the UN Special Envoy on Climate Action and Finance.

That, you know, the company should fully disclose all relevant information about their business seems to me a basic requirement in a market-based system. But whether this applies to the fossil fuel industry is a different matter. First, as Jake Sullivan, the U.S. National Security Advisor said in a recent speech, a central fallacy in American economic policy has been to assume that markets always allocate capital productively and efficiently.

The risks that Mr. Carney pointed out are now readily apparent, or as Bob Dylan sang, you don't have to be a weatherman to know which way the wind blows. The wind, and rain, and freezes in Texas have shut down refineries. The ups and downs of oil and gas prices are in hyper speed now. The decline in the cost of renewables routinely exceeds predictions. Yet as to fossil fuels, the market seems to be full speed ahead and damn the torpedoes.

Second, regarding disclosure and moving the markets for investment, even if this works, can it be done in time to avert the worst catastrophes of climate disaster. And also, the oil majors are fighting tooth and nail anything that might shut down their profit party. You can see this in their opposition to SEC rules, the industry has scaled back climate targets, spent 34 million on lobbying in Sacramento last year as the industry profits and gas prices soared.

A recent study found that -- in science found that the net zero commitments of 75 of the largest fuel companies are largely meaningless. The industry is not reducing CO_2 emissions as required to stay even under 2 point -- degrees.

For these reasons and per Mr. Carney's proposed strategy, it's clear that the fossil fuel majors do not qualify for CalPERS investments. Pension funds such as ATP in the Netherlands, New York City, and others have or are divesting in reasonable time frames to the tune of 40 trillion and CalPERS should join them.

Thank you.

CHAIRPERSON MILLER: Thank you.

Do we have any other callers?

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: No, sir, we do not.

CHAIRPERSON MILLER: Okay. I'm not seeing any other public comments requested. I'm not seeing any requests from the Board, so at this point, we'll conclude Item 6a. And I think we've been going at it almost two hours now, so we'll take a 10-minute break and then we'll jump back into the Investment Committee agenda in its normal order when we come back. Great. 11:05.

(Off record: 10:56 a.m.)

(Thereupon a recess was taken.)

(On record: 11:11 a.m.)

CHAIRPERSON MILLER: All right. Okay. Everybody is filing back in. We'll -- everyone had enough time for our brief recess and we'll pick back up and get started again.

So I'd like to circle back now to Item 2, the Executive Report, from our Chief Investment Officer. I'll turn it over to you, Ms. Musicco.

CHIEF INVESTMENT OFFICER MUSICCO: Thank you. I rushed through my report in order just to hit that timeline. And so I think most of the additional comments that I would have had we'll pick up as we go, so we don't lose more time.

I think one question we did have for you though, will we go back to 5a, the information barriers piece, the insider trading before we launch into 6?

CHAIRPERSON MILLER: Yeah. Yeah, well, that's our action item.

CHIEF INVESTMENT OFFICER MUSICCO: Okay.

CHAIRPERSON MILLER: We've already covered our consent items, so let's go to Action Item 5a, revisions to the Investment Policy for insider trading.

CHIEF INVESTMENT OFFICER MUSICCO: Great. Thank you. And we'll Brian up.

CHAIRPERSON MILLER: And we have Ms. Deming.

CHIEF INVESTMENT OFFICER MUSICCO: Oh, there he is.

INVESTMENT MANAGER McQUADE: Good morning, Committee members. Brian McQuade, CalPERS team member.

We're asking for approval today to update or Insider Trading Policy. There is a number -- or a few changes to the policy since we last took a look at this in 2014. The most material change is to allow for the Investment Office to formally implement information barriers. We would like to get, of course, any input or feedback you have on that or other changes.

So because CalPERS has such a large allocation to private investments, and therefore we're, you know, always involved in many private deals, the CalPERS Investment Office obtains material non-public information on nearly a weekly, if not sometimes daily basis. While it's important that our private asset teams be able to evaluate that information to diligence -- to do proper underwriting and due diligence, we need to make sure that the information is not available to or shared with a team member who trades the public stocks and bonds of the same company.

The current approach is to assume right now that everyone within the Investment Office possesses the actual MNPI, and as a result, we end up restricting the public teams from trading stocks and bonds of the affected company when a private team has MNPI. In reality, the public teams rarely, if ever, are made aware of the nature of the MNPI, so these restrictions on our public asset classes are suboptimal and place us at a disadvantage.

An alternate and widely used approach that we're proposing today is to create information barriers, which are designed to prevent the public team from accessing information about these private market deals, and therefore we would no longer have to restrict them with training -- or, I'm sorry, with those restrictions.

In large investment management firms, this is a common place practice such as Blackstone, BlackRock. And effectively designed information barriers are in full compliance with SEC insider trading rules. I should note that we just finished mandatory training for everyone in the Investment Office. We covered a number of topics, including Insider Trading Policy and information barriers.

So just to summarize, our proposal will help satisfy really two objectives: number one, ensuring that our public market investment teams are not disadvantaged when our private teams are evaluating transactions involving a publicly-traded company; and number two, this is seeking to reduce risk for the office, in that in under an information barrier framework, this would ensure that information is tightly safeguarded and controlled there -- you know, therefore not having any information leakage to the rest of the organization.

So with that, I'm happy to take any questions you may have.

CHAIRPERSON MILLER: Okay. It looks like I have Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you. Thank you. Thank you, Chair Miller, for your direction.

I'd like to have a question. Thank you very much for your comments on this particular subject matter on this -- on the policy. I want to know how -- you know, how can staff provide -- I mean, can you elaborate on how staff can provide more details on the information barriers and training design to ensure that the proper handling of material non-public information is secure? I mean, is there -- is there a particular roadmap that you have in place if this is to be passed?

Thank you.

INVESTMENT MANAGER McQUADE: Yeah. So we are right now -- you know, we do have to do -- you know, in addition to the policy change, we do have to put in place a couple of things. So one is on physical barriers. So on physical barriers that would involve having all of our private asset teams on the fourth floor, and that's been completed. The second part on the physical access is ensuring that the individuals that are in the private asset class and the public asset classes can't visit each other on each other's floor, so that would be that.

The second part of it is on technological barriers. So, you know, we're largely complete there, but this is really looking at making sure that, you know, MNPI that say private equity would receive would not be accessible to the public asset classes anyway. So those are the -- kind of the things we're going to be wrapping up over the summer.

COMMITTEE MEMBER PACHECO: I see. Thank you very much for your comments.

CHAIRPERSON MILLER: Okay. And I believe we have public comment on this item before we consider taking action.

It's on the phone, Mr. Teykaerts.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: One moment, please.

CHAIRPERSON MILLER: Okay.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: All right, Chair Miller. We have Valentina. Go ahead, Valentina.

VALENTINA DAVOS: Hi. I'm speaking on Item 6b. Should I wait until we move along on the agenda?

CHAIRPERSON MILLER: Okay. Yeah, we're not there yet then.

Let's -- Mr. Teykaerts, could we queue that up for when we get to 6b?

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Yes, sir.

CHAIRPERSON MILLER: Okay. Thank you. Sorry about that.

Okay. So we're looking for a motion on this one.

COMMITTEE MEMBER PACHECO: I'll motion.

CHAIRPERSON MILLER: Made by Director Pacheco.

VICE CHAIRPERSON TAYLOR: Second.

CHAIRPERSON MILLER: Seconded by President Taylor.

Any discussion on the item?

BOARD CLERK ANDERSON: We have public comment on this item.

CHAIRPERSON MILLER: Oh, we do have a public comment on -- a different public commenter. So let's have this comment before we take our vote.

VICE CHAIRPERSON TAYLOR: Is he on there?

CHAIRPERSON MILLER: Do we have our commenter queued up for Item 5a?

MR. JELINCIC: J.J. --

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Go ahead, J.J. Go ahead.

MR. JELINCIC: Okay. This is J.J. Jelincic. I'm speaking on my own behalf as a retiree.

This was not on the March draft agenda. When the Insider Policy Trading was adopted, it was a result of a meet and confer with Local 1000. I would point out that, at that time, CalPERS Legal specifically rejected a bifurcation as staff is now proposing claiming it was illegal.

The last time I know about a violation, the Investment Office offered four explanations. The first three were provably wrong, and the fourth explanation when

I questioned it, Rob Feckner, then Board President, said that the question had been asked and answered and directed staff not to respond.

Management terminated the Compliance employee who discovered and then kept elevating the issue every time she was told to simply ignore it. The Board used Trust funds to pay that employee a year's salary -- or basically a year's salary to go away.

The SEC investigated. They did not take action against the fund, but they specifically said that should not be taken as a -- taken to mean that there was not a violation, and later I got public -- I got punished for mentioning it. My request to the Board is that you postpone this item, that you take the time to read Rule 10b5 that you're planning on incorporating. I do not believe staff files written plans. Direct management to meet and confer with Local 1000, CASE, and ACSS case their members are directly affected, and then examine and consider the proposal including the actual barriers that are in place.

Thank you.

CHAIRPERSON MILLER: Okay. I believe that concludes the public comment on this.

I do want to acknowledge that J.J. has raised some issues that I wasn't aware of. And -- so okay, any further discussion?

We've got a motion on the floor and a second.

COMMITTEE MEMBER PACHECO: I would like to change.

CHAIRPERSON MILLER: Okay. The maker of the motion -- would you like to --

COMMITTEE MEMBER PACHECO: I would to --

CHAIRPERSON MILLER: Let me get you. There you go.

COMMITTEE MEMBER PACHECO: Given the facts that we didn't -- I did not know this at the time, and there was a meet and confer, I would motion that we --

CHAIRPERSON MILLER: You want to just withdraw your motion?

COMMITTEE MEMBER PACHECO: I withdraw my motion, Yes. Thank you.

CHAIRPERSON MILLER: And so -- yeah, let's let Matt speak for this.

GENERAL COUNSEL JACOBS: Thank you, Chair Miller. The information barriers that are proposed here are definitely not illegal, as Mr. Jelincic states. I don't have any recollection - I wasn't here at the time - but that the Legal Office would have opined otherwise. We have -- in addition to our own opinion on this, we have consulted with outside counsel who confirms that information barriers are a perfectly appropriate way to proceed in this type of situation and has even reviewed the draft amended policy that is before you today.

So I don't have any of the concerns that Mr. Jelincic has articulated. I also think the incident that he talked about several years ago is a bit of a mischaracterization of what happened back then.

Thank you.

VICE CHAIRPERSON TAYLOR: That I was going to ask was somebody to explain it. Thanks.

CHAIRPERSON MILLER: Okay. Given that explanation, do we have --

VICE CHAIRPERSON TAYLOR: We've got Yvonne wants to talk.

CHAIRPERSON MILLER: We've got Yvonne.

COMMITTEE MEMBER WALKER: I have a question. Was Local 1000 met with concerning this policy? I know that we typically -- we get note -- they get noticed and they have the opportunity to meet. Were they noticed? Did they request to meet or not?

GENERAL COUNSEL JACOBS: It looks like Robert Carlin may have some information on this.

COMMITTEE MEMBER WALKER: Thank you.

GENERAL COUNSEL JACOBS: Mr. Carlin is one of my colleagues in the Legal Office.

SENIOR ATTORNEY CARLIN: Good morning, Committee members. Robert Carlin from the CalPERS Legal Office. I don't believe SEIU or any of the other bargaining units were notified about this, but that's because this policy change will have no impact on any represented members. Nothing is going to change from any individual's perspective. What this will simply allow is for the Investment Office public teams to be able to conduct their business without the private market teams directly impacting them, which is what's happening right now. That's the main impetus for brining these changes. So it's perfectly within the Committee's discretion to postpone this item, but I don't think there's any reason that you need to do that at this time.

COMMITTEE MEMBER WALKER: I just want to say -- I'm sorry.

CHAIRPERSON MILLER: Oh, no. Go ahead.

COMMITTEE MEMBER WALKER: And I appreciate the explanation. Thank you. But I also want to say that as a matter of process or policy, you send the notice to the unions. Whether they respond or not, or say like, look, this is not something that has anything to do with us, they'll send that back and then it goes forward. But without that, right -- and I do appreciate your explanation, but I am hesitant without them at least having the opportunity to say you're right this has nothing to do with us. Go ahead. And so I would ask, Mr. Chair, that we postpone that, until that gets done.

CHAIRPERSON MILLER: Okay.

COMMITTEE MEMBER WILLETTE: You want to make a motion?

COMMITTEE MEMBER WALKER: I'll make -- my seatmate -- my colleague just reminded me, I should make that a motion. So I would move that we postpone this until the unions have been noticed.

VICE CHAIRPERSON TAYLOR: Second.

CHAIRPERSON MILLER: Okay. It's been moved and seconded by President Taylor.

Any further discussion on that motion which is now on the floor?

Okay. I've got Director Ruffino.

ACTING COMMITTEE MEMBER RUFFINO: Thank you, Mr. Chair. I had the same question of which has been answered, but rather than the unions, I want to make sure also that we include the supervisory organizations that represent the supervisors and managers in State government. And it was mentioned ACSS being one of them. So I encourage that we send the same notice also to the supervisory organizations.

The other comment -- well, it's kind of

irrelevant, but there is not a deadline. There's no particular reason why we would have to act today. Is there any compelling reason that delaying this or postponing would have an effect?

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: No, sir. You know, as it says in there, the investment teams -- the public market investment teams are blocked from trading certain things and so that creates some risk, but we've been living with that risk now for years. This cleans it up and gets us to industry best practices. But it makes perfect sense to let the unions and the supervisors know, and then we'll bring it back in September.

ACTING COMMITTEE MEMBER RUFFINO: Thank you.

CHAIRPERSON MILLER: Okay. Director Middleton.

COMMITTEE MEMBER MIDDLETON: All right, I think my question just got asked -- answered. From an operational impact, if we do not act on this until September, and we're not going to be able to until September, is there any negative impact?

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: No. As I say, it's just -- it's the risk that we're living with currently. It just means we'll delay three months closing that risk.

COMMITTEE MEMBER MIDDLETON: Okay. Thank you.

CHAIRPERSON MILLER: Okay. Well, we've got a motion and a second. I see no one requesting further discussion, so I'm going to call for the question.

All in favor?

(Ayes.)

CHAIRPERSON MILLER: Any opposed?

No abstentions.

So the motion passes, the ayes have it. And we'll see staff back with this in September.

Okay. That concludes Item 5a.

So let's move on to 6b, Ms. Musicco.

CHIEF INVESTMENT OFFICER MUSICCO: Great. Thank you.

(Thereupon a slide presentation).

CHIEF INVESTMENT OFFICER MUSICCO: In my opening remarks, I mentioned I was looking forward to bringing this item forward. You know, we don't often get an opportunity to kind of walk you through the roadmap, our thinking of the work we're doing behind the scenes. I would liken this item to being if you buy a really old house, like I've done before, and try to renovate it, you don't really see what's going on with the waterproofing or the new flues in a chimney, or some of the foundational work, but it's so important for what comes next.

And so the best way I would articulate what we'll go through today, for the past year we've been working on nine very specific strategic objectives really to act as a diagnostic tool really to help level set where our strengths are, our weaknesses, opportunities, and threats, a tradition or typical SWOT analysis, if you will. But rather than having it be theoretical, we went into action right out of the gate, and we had nine of our -- we had nine business objectives, which I'll walk you through, and I'll walk you through the roadmap. And I guess more importantly, I'll leave you with a sense of where we're going to next.

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CHIEF INVESTMENT OFFICER MUSICCO: So this really is -- this really is just to give you a sense of our approach our systematic approach to making sure we're setting ourselves up, both through an investment opportunity's lens as well as a risk mitigation lens. Again, I will touch on resiliency and innovation being two core tenets that I think are really important to help us evolve to being a best in class investment program, which when we come to you in September, and we'll spend time together in July, we'll talk about what our strategy 2030 what our ambitions are for that strategy. And these nine business initiatives have really helped lay the groundwork for that.

And so just to give you a sense of the activity that the team went through, we spent a lot of time revisiting what our -- what our purpose is and identifying what our purpose looking through that lens of innovation and resiliency to meet the -- our objectives of serving our stakeholders, and we came up with these nine initiatives. And it wasn't enough just to lay out what these nine business initiatives were, but I was very proud to see each and every one of our MIDs and my direct reports each owned one of these. And really the idea and the understanding out of the gate was no one is a success in their business initiative that you're leading unless we're all a success and let's really this as an opportunity over the past two months to really focus on collaboration across asset classes.

So there are a couple of subthemes that were relevant here. I wanted to do a SWOT analysis and a diagnostic, if you will. I wanted to really start to push this culture of innovation and resiliency through collaboration.

And I think -- you know, I'm proud to report and I'll get into the details a bit on some of the more needle-moving initiatives, but was really proud to see the leadership and the collaboration that really came out of these initiatives. I think we -- buy doing these nine initiatives, again, we set up a number of working groups that aligned against portfolio, processes, people, and performance, the four pillars that we often referred to. We used lot of working groups, if you will, that were staffed with multiple members of multiple teams.

And so all in all, I think by the numbers, the group sent me this today. We had over 110 team members involved in these initiatives. We had our consultants at Wilshire and Meketa helping us along the way with insights as well. There were 85 cross-asset class and program area team members in particular that all took on leadership roles through 22 workstreams and these nine initiatives.

And so again, as we -- as we thought about them when we tried to organize ourselves, we thought what are some of the biggest needle-moving items we can focus on and use as diagnostics through the innovation and resiliency lens. And in some cases, they were killing two birds with one stone. And so just in summary, as you'll see for portfolio, this is where we focused a lot on our total port -- fund portfolio optimization. We looked at a private market innovation platform. We got into the private debt strategy implementation. And again, I'll get into the weeds a bit on the outcomes of each of these, but just to level set.

For process, data and tech. As I said to you, one of the four things that's keeping me up at night is definitely tech in general -- data and tech in general, AI in general. And so having a sound data and tech strategy right out of the gate last year we knew was work we needed to do.

Business process optimization. That was a bit of what you heard earlier. We want to make sure that we're set up to protect and to push our investment mandate, our strategic asset allocation forward making sure we have the right protections in place. And so we'll come back to you in September with that item that we just pushed to September amongst some other things that we worked on and I'll get into.

Improving stakeholder engagement, that's an important one. We spent a bunch of time really defining what is a stakeholder. You're certainly our stakeholder. The individuals you represent are our stakeholders. Our own investment's team is a stakeholder, the broader CalPERS organization, the executive team.

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CHIEF INVESTMENT OFFICER MUSICCO: We really have big ambitions to make sure that we're firing on all cylinders, which is why -- with improving stakeholder engagement, which is why it was one of our nine initiatives this year. The people -- the people strategy, I've said it a number of times. The saying goes are our talent as asset managers or assets owners is -- our talent goes up and down the -- our assets go up and down the elevator every day. And so having a strong culture that is geared towards being best-in-place investors is instru -- it's instrumental for us to be a success. And so I'll speak to you on some of the initiatives that we've accomplished and where we're going forward.

And then finally on performance, performance really overarches all of these, but specific to our ability to drive alpha and think about new strategies going forward. We had both an active risk innovation initiative, as well as our sustainable investment strategy, which we -- you know, we've brought on somebody, Peter Cashion, to lead that and we'll be spending a bunch more time with you on that. That's just a quick highlight of the buckets.

We can go to the next page.

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CHIEF INVESTMENT OFFICER MUSICCO: So I'll flag some of these, and certainly afterwards, please feel free to ask me any questions. I guess these are -- these are the proud moments I would like to speak to to -- really to congratulate the team, but also to identify, you know, we have -- we have a lot of work to still do. And so we've had some great short-term outcomes on the portfolio.

As you know, we've committed a billion dollars to make sure that we're walking the talk of investing behind diversity. We have an incredible conference that we're very proud of. The team that's been involved, as well as many partners across CalPERS, this is -- it's a -- it's big thing to pull off an investor conference with over 700 attendees at this point. We're combining allocators in the room from across the globe with entrepreneurs, that are diverse, so that they can bring forward their ideas and their investment opportunities. And we created a convening place, if you will, between the allocators, that have the capital and the investors, the entrepreneurs, that diverse environment that has these ideas. We're bringing them together. So we're really excited about that.

As you know, we've established the private debt asset class as a result of the strategic asset allocation. That team is lean and mighty and we're working on not making it so resource constrained, but that team alone has been able to lean into the strategy, deploy over 10 billion in capital this year, and start to partner up with smart friends, smart strategic partners that will give us both scale as well as access to opportunities in the market, and work on this knowledge transfer that I've often spoke to as being instrumental in us building out our direct programs over time.

We -- when you think about how we can be, you know -- have better results with the investing that we're doing, a big part of that, as you know, is there's a heavy burden from a fee perspective on direct investing, so making sure that we're really focused on alignment with our partners, that we have -- you know, just like ourselves being held accountable to perform, we want to hold our partners accountable to perform. And so we've done a great deal of work, starting with our real assets portfolio just to make sure that we are better aligned, our fee structures are better aligned with performance outcomes.

Global fixed income, a shout-out to them as well. They've been able to, as according to the strategic asset allocation, have deployed over 20 billion into emerging market debt, which lines up with our SAA. As you know, we combined our private equity and growth innovation and pipelines, our activities, our teams, if you will, we've put those under one umbrella un Anton Orlich and already that team has seen tremendous traction and momentum, if you will, in transitioning to a greater focus on co-investments versus just fund investments.

We've certainly enhanced the modeling of our longer term liquidity, as well as we've identified about 100 million of additional value-add opportunities in our financing strategies, which we'll work to tweak over time and present you with results of that going forward.

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CHIEF INVESTMENT OFFICER MUSICCO: So for process, again, we came to you in June and November with a number of policies that the Board was very supportive in helping us make small changes or tweaks to give us more agility and flexibility to align with the aspirations that we have with the strategic asset allocation to be leaning more into direct investing, for example, have more efficiencies.

The team has certainly helped to help me as a CIO with my own ability to have information efficiently to make decisions. And that comes through with the CIO dashboard and metrics. It also comes through, I think, in the approach we're using to reporting. We'll go through the trust level review today. We presented to you in March a revamped style, more of a let us help you see the story behind the numbers. And so hopefully you'll continue to give us feedback on that as we evolve that approach. But again, it's trying to make sure everybody understand what's under the hood, so that you're not just looking at the numbers.

The data and tech strategy, as I said, this to me is going to be one of the most important nonspecific to investments, but so encompassing with investments strategies that we can get right going forward. And it's not about just positioning us to be best in class, which is our North Star for our strategy 2030, but it's frankly to catch up.

We have a lot of work to do with the pipes that we use today to make sure that we are -- we know what we're doing, where we're doing, and how we're doing investing. And so we have a bunch of work to do there. It will require resources and capital. And we'll come to the Board with more detail on that and we've been certainly leveraging the help of outside professionals, consultants to help us really understand, to use Mark Carney's analogy earlier, where the puck is going with respect to data and tech strategies in the market and making sure that we're remaining competitive in that regard.

As well, finally, I think this last one, you know, there's no -- there's some unsung heroes Sarah Corr oversaw streamlining processes as one of the pillars. She's thankfully -- she's been at CalPERS for a long time and she really stood up to the challenge of me saying where can we gain efficiencies just by getting rid of things that -- where we're standing in our own way? And so things like contracting or different processes that we had in place, she's turned the stone over on all of those. And I feel really proud of what the team has been able to accomplish, again though with the help of many of the departments across CalPERS helping us get there. So that collaboration has just been really energizing to be honest. It's been -- it's been great to see the help we've gained across the Board there.

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CHIEF INVESTMENT OFFICER MUSICCO: If I could switch to people. I should have started with people, because I think it's the most important part of our strategy going forward. And really again, if we've -- if we've set this goal this North Star that we'll talk more to you about under this strategy 2030 banner, you know, it's really about making sure we create a culture of people that are aligned and motivated to be best in class, making sure we have the tools and the systems in place to promote this culture of continuous learning, to promote a culture of mentoring and leadership, what makes us good leaders, what can we do to be better leaders, how do we motivate, how do we align incentive with performance, et cetera.

And so we've had a really great last couple of months where we've been doing some deep workshops with the MID level and the ID level leveraging outside professionals who come with both the practition -- practical piece of people and culture as well as the theoretical piece of people and culture, and how to move organizations in the direction of being best in class. And so there were -- this workstream probably had -- this initiative probably had the most workstreams. We tackled everything from mentoring programs, succession programs. We tackled our investment associate program. We are excited that we'll be able to give you more detail on a collaboration that we will have with Stanford University on a fellowship program where we'll bring in researchers for a period of time working with CalPERS and potentially the CFA. There's just a ton going on here.

Just by saying let's make this a priority, we came up with a number of workstreams across asset classes. We're working with partners in HR on the enterprise side really to foster this culture of putting our people first and making sure we've evolving our skills, our talents, et cetera. And so I'm really excited about the fruits of this labor. We'll get into that a lot more as we start to rollout and make kind of a business-as-usual -- some of these initiatives business as usual. So stay tuned on that.

Probably, one of the most important pieces we accomplish though based on the brand of CalPERS and what it is that we're doing here, the mission, and all that this, as an organization, has to offer one in their career, we've been able to land some very key leadership hires in the last 12 months. I was really excited to introduce -- or to bring on our Deputy CIO of Private Markets, as well as our MID of Private Equity and Sustainable Investments; at the ID level, which is really the engine room, where not only is the execution of the investing happening, but some real important, you know, carrying the load of mentoring and leading in the ID -- on the ID level of corporate governance, credit research and strategy, sustainable investments, private equity.

And all in in this last year, we launched 83 hires and filled 73 of those roles. And we anticipate hiring another five to seven within the next month. And so all in, we could not have done that without multiple parties across the organization, both within the enterprise side, the executive team support, and as well as our investment team rolling up their sleeve to find the best talent out there. And so I'm really proud and shout-out to the team on that.

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CHIEF INVESTMENT OFFICER MUSICCO: I think finally on the performance side, again performance -- perform -- all of those initiatives lead to stronger performance, but just to give you some specifics around some of the new strategies that we're looking at. One of the initiatives was called an Active Risk Innovation Platform. That was really just -- that was a call to action. That was to say let's get this -- the extremely bright minds we have in this organization on a -- in a systematic way talking about the potential for innovation, both through the risk lens as well as the investment lens. Let's come up with what the realm of possible is for new products, assess what we would need to launch those innovations, those strategies, and work together to really, again with this notion of where and how do we become best in class 2030.

There were 14 strategies that came of that research work, some of which are already in flight. Probably most importantly, we've laid the foundation, the framework, if you will, for how do we surface these ideas, how do we talk about them, research them, how do we implement them, how do we make sure we have the right capabilities in place. If we don't have them in-house, how do we find them with strategic partners on the outside? All of that work just having that governance piece, which comes through the CIO forums that we talked about establishing earlier in the year, the Investment Committee, the Total Fund Committee, and the Operations Committee, through those three forums, we now have a bona fide place to raise not only issues but opportunities. And so I was really excited to see folks take that on.

We've also done, you know, like we've been looking under the hood of how we are aligned with our fee structures with our partners, we're also just outright looking at the actual portfolios and how they're performing and doing a cleanup, if you will, of non-strategic assets or discontinued underperforming assets.

We've focused our attention to fees not only on the private market side, but also in some of our public markets areas. And later today, you'll start to hear about this new approach that over time and we will evolve over time, but an extra tool in our toolkit to generate value-add. We're starting to talk a lot more about risk budgeting frameworks. How do we make sure that the risk that we are implementing is getting the appropriate risk-adjusted return on that risk? How do we make sure that our focus is on generating dollars value-add through our active programs?

That's an entirely new way. It's an additive way. It doesn't replace what we do, but it's another tool in our toolkit to make sure we're all focused on those active strategies returning the appropriate level of return for the risk that we're taking. And so more on that.

And finally, a huge initiative around sustainable investment. You heard from Mark Carney today on just the size, and the scope, and just our role as institutional investors, the opportunity that is there, but also the risk that is there. Really making sure we're putting -- looking ourselves in the mirror to make sure are we again walking the talk. Are we best in class, thinking about how we implement ESG frameworks? Are we thinking thematically about where these opportunities are? Are we thinking thematically about where the risks are? And that's why it was so important with, you know, Marcie's blessing when I first joined to bring that sustainable investing role over into investments, so that we can make sure that we are leading into the investment as well as the risk lens of sustainable investing.

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CHIEF INVESTMENT OFFICER MUSICCO: So next page please. And so what is our path forward? As I mentioned, nine initiatives, 22 plus workstreams across those initiatives, over a hundred individuals involved in that. Many of these outcomes now are obviously business as usual. A few items that were just bigger lifts, things around portfolio optimization. For example -- another example I gave on the risk budget, those things will carry on through and find their way into our next year's strategic initiatives. People and culture is just going to be something you're going to hear us talk about every year that I'm here in front of you. It will continue to evolve.

But what this has done by going through these nine business initiatives this past year has really laid this foundation I referred to earlier. It really sets us up for saying, okay, we know what we've got, we know where the weaknesses are, the opportunities, the threats, et cetera, let's lay the groundwork for our strategy 2030, which we will work through and walk through with the Board in the coming months.

I was really delighted and proud of the outcomes of the team this year. I think that there were some sleeping giants, if you will, of opportunity within our -- within our teams, within our programs that were just waiting for the moment to be energized. And I think the Board will be excited to see, once we walk you through strategy 2030, how much momentum we already have. And so I'm really looking forward to walking through all of that with the Board.

I think I'll leave it at that, just so that I have some time to walk -- to walk through any questions that the Board may have. Thank you very much.

CHAIRPERSON MILLER: Thank you very much. We do have some questions. I'll start with Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you. Thank you, Chair Miller. And thank you, Nicole, for your presentation. This is very, very interesting and I do appreciate your thoroughness on this report.

I'd like to ask you a question on slide number, on the highlights and accomplishments of the profile. I just want to ask what benefits or advantages do you expect to realize with the consolidation of the pipelines in private equity and the growth innovation pipelines? Are you satisfied with the progress made with co-investments in the private asset classes at this time? Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: I'll start with the second part of your question with, you know, a resounding yes. I think you'll get an opportunity to really hear about the great work the entire team has accomplished with respect to co-investing. It's not just about deploying the capital though, it's making sure we're aligning ourselves with the right partners. It's making sure we have the right investment decision-making framework in place, the right governance in place. It's making sure that our pacing is thoughtful. It's making sure we understand that our -- where our liquidity is and implications on that liquidity, and it's making sure that we have the right mix of risk within these private market programs.

And so part of bringing together private equity, growth and innovation all under one umbrella, to answer the first part of your question, was really about making sure we were really ring fencing and understanding the entire spectrum along the risk-reward spectrum, if you will, of private equity, which should include, in my mind, everything from venture through to private equity to make sure we have the right mix, to make sure we're bringing on the right resources, to make sure that we're being thoughtful in the thematics that we're focused on, some of which are perfect for the venture investing bits, and other parts are perfect for the other parts of the program, like our buyout or mid-market buyout.

Having a systematic approach to understanding the value creation levers within that program is also important, so think about just portfolio monitoring in general. And by having both the growth bits and the more traditional buyout bits together all under one umbrella and folding in venture, it just makes sure that we're using, you know, best-in-class approaches to that monitoring.

And that ties into the monitoring and the aspirations we have for the ESG work that we're going to do, the sustainable investing work that we're going to do, as we've talked about in the past, growing into, evolving into more of a direct investing program. And I've always said that's like a 10-year thing. Really at the heart of that is making sure that the knowledge transfer is there, that we have the right strategic partners working with us, training us up, giving us that knowledge transfer. And again, putting that all under one umbrella to me was a really important next step in our evolution towards that.

COMMITTEE MEMBER PACHECO: Thank you very much, Nicole. I have another follow-up question I want to ask.

CHIEF INVESTMENT OFFICER MUSICCO: Please.

COMMITTEE MEMBER PACHECO: Back on slide number 7, which I was also very interested in, you know, on the -- you know, what is the -- what do you anticipate the timeline for deciding whether to utilize some or all of the 14 active risk strategies being researched on the innovation platform? So I'm curious about that. Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: Sure. A number of the strategies -- when we say new strategies, just to clarify, a lot of these were ideas that have been percolating long before I arrived.

COMMITTEE MEMBER PACHECO: That's right.

CHIEF INVESTMENT OFFICER MUSICCO: And it's just a matter of having a governance structure in place to make a decision to press go or no go.

COMMITTEE MEMBER PACHECO: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: It's also making sure -- you know, I often will say is this going to move the needle? When you think about the limited resources that we have at CalPERS, I want to make sure that we have the right skill in place, that we are focused on working with the right partners, and that overall it's contributing in a way that's going to move the needle at the end of the day.

And so part of having a governance structure that looks through all -- each and every one of those bits, and having it all consolidated under one gives us a very good vantage point to prioritize which of these strategies makes sense today for us to implement, which of these strategies make perfect sense for CalPERS. But to get there and to move the needle, we may need to rely on some smart friends, outside partners, strategic partners.

And so the team right now -- again, if I think about the level of collaboration that's happening across the Investment's team to address and answer the how, and when, and why --

COMMITTEE MEMBER PACHECO: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- it's really exciting to see the energy and the excitement. And so some of the things that will be launched outside -- as a result of just coming together and prioritizing, you'll see in the coming months. In other places, they'll be incubated. They don't move the needle, but they're the right thing for us to be growing into and growing knowledge into over time. And so they might take a bit more time and we might have to rely on outside parties, for example, to help us implement some of the strategies.

COMMITTEE MEMBER PACHECO: That's -- thank you very much for that information. Thank you.

CHAIRPERSON MILLER: Okay. Next, we have President Taylor.

VICE CHAIRPERSON TAYLOR: Thank you, Chair Miller.

Nicole, great presentation. I like the 30,000 foot view that we're seeing here. So I had a couple of questions. I think three. One, I wanted to get an idea of -- you said -- you talked about our stakeholders. You want to be more responsive to our stakeholders. So as the Investment Office -- as the Chief Investment Officer, who do you consider your stakeholders that you should be contacting and do you have different stakeholders that other people should be contacting type of thing? I'm trying to --

CHIEF INVESTMENT OFFICER MUSICCO: Sure. Yeah.

First, I think that first exercise that we went through is like let's articulate who's a stakeholder. And we realized pretty quickly the list is long, because lots of folks are interested in what we're doing and understandably so appropriately so. And so working with our partners on the enterprise side with Brad and team, and bringing on Kelly Fox to come over and oversee stakeholder engagement, we're really excited about the ideas we're starting to generate about how do we just build up the -- our own brand and talk more to that broad base of stakeholders and, you know, I went through them, everything from internal stakeholders to external stakeholders, Board, executive, our two million plus stakeholders at large. How do we do a better job at keeping them informed on what's important to us, how do keep a -- do a better job at informing how we're doing against our own objectives, how we're holding ourselves accountable.

And so a lot of that in the coming year will come in the form of, well, we started with your group. Hopefully with the Board, hopefully we're doing a better job through things like revamping the TLR, revamping our quarterly, boarded education sessions, engaging with you more frequently, engaging with you on the topics that we -- that we're hearing you say you really care about.

So hopefully, what you'll start to see is that this initiative to engage with you is manifesting itself in better communication, tools, and products, better website utilization, better reporting the reports themselves, more engagement with you at places like our off-site, engaging with -- in the stakeholder forums, et cetera.

And so it's really just more about opening the hood a little more a letting take -- people take a peek inside to see what we're doing, why we're doing it, and where we're prioritizing.

VICE CHAIRPERSON TAYLOR: Thank you very much. I appreciate that.

When you talked about knowledge transfer, I love that idea, and you and I have talked about that a little bit. I don't want to get too far into it. We don't have to, but if you could sort of do a little expansion just -- because you just mentioned the knowledge transfer.

CHIEF INVESTMENT OFFICER MUSICCO: Sure. Yeah, knowledge transfer, you know, it can come in a lot of forms. Right now, you know, if I step back for just a minute, when we talk strategic partners, you know, what really makes them strategic to us or us strategic to them? We have capital. They want capital. That doesn't really make for necessarily a strategic partnership. But where it starts to get really interesting is when we can lean on them for some of our organizational needs, including knowledge transfer.

And so if we find an organization, an investment partner, that is an expert in AI -- let's use AI, for example, and there's ways we could invest with them. There's ways that we can really get in the weeds on how have they build up their own in-house capabilities, tech and data wise, machine learning, how they're using AI. If we can learn from that and apply those learnings, both through the investing lens and risk mitigation lens, that's what really creates a real sizzle to that what a strategic relationship is, understanding that the capital is there for them to build their business. Well, in return, we're going to get the under -- the table stakes is great returns, but we're also going to get that knowledge transfer, both into how, and where, and why the team invests, but also into our own internal processes.

We glean a lot by spending time with our partners to say how do you make decisions? How do you say -- like, when you say no, what did you go through that might be different? When you say, yes to an investment, what did you do? When you think about your ESG framework and how you apply it, what are you doing different than us? And by spending, you know, time and attention on that, and brining that knowledge in-house, it's just -- it's accelerating our ability to get to where we want to get to at the end for our own strategic destination.

VICE CHAIRPERSON TAYLOR: Excellent. Thank you. And then my last question was you had mentioned integrated sustainable investment team, which pulling it over to the Investment Office, but then you talked about thinking thematically. So what does exactly that mean for the sustainable investment team?

CHIEF INVESTMENT OFFICER MUSICCO: Well, you know, if you think about all the branches, if you will, of a sustainable investing strategy, you know, we've been leading in the market, if you will, on the advocacy piece and the education piece, but we're really trying to expand on this. We're saying, okay, how do we become global thought leaders through the investing lens into sustainable -- into sustainability. And having Mark Carney here today is one of -- you know, as one example of how one of our investment managers is investing very thematically into sustainability. And so thinking about that, that's through the climate lens.

We have the other lens that we've been spending a great deal of time on, which is why we've launched our catalyst conference, investing sustainably through the diversity lens. And so if you think about themes, you could AI into that as a thematic. How will artificial intelligence interrupt or disrupt, if you will, the economy in the way that automation did? We talked a lot -- we talked a little bit about that in Mark's conversation today.

We need to be getting ahead of and investing in that AI thematic. We need to be better understanding the implications going forward for our portfolio. And so sustainable investing to us is everything from how we do, and why we do, and the voice we use, and the engagement we use through the advocacy bits, but it's also the risk mitigation bits as well as the investing bits. So pulling all that together, we think is, you know, very -- it's more than appropriate. It's really -- it's expected of us to have that.

VICE CHAIRPERSON TAYLOR: Excellent. So global thought leaders. And I was wondering if we could drill down on that, because we don't just want to be global thought leaders, we want to be leaders on our sustainable investing. So I just want to know have you taken that global thought leadership further into being actual leaders in sustainable investing?

CHIEF INVESTMENT OFFICER MUSICCO: Yeah. And it was -- it was refreshing and I was happy that Mark thought to mention to all of us today that while other groups are -- have got a wee bit of ahead start on us. It is still very early days as institutional investors like ourselves to demonstrate that we can be leaders in the transition.

And our full intent is to be a leader in this transition. And again, through the sustainability lens, we don't just have to be leaders in energy transition, we can also be leaders in investing behind other thematics like diversity. And so we're really trying to put, you know, our foot forward and demonstrate to the market that we're not just going to be talking about these issues ad nauseam. We're actually going to start putting our capital and hiring up resources and investing in our own technology and data, et cetera, so that we can position ourselves to truly be leaders and not just thinking about it.

VICE CHAIRPERSON TAYLOR: Okay. Great. Thank you. I appreciate it.

CHAIRPERSON MILLER: Okay. Director Middleton.

COMMITTEE MEMBER MIDDLETON: All right. Thank you. Well, I want to pick up on the theme of Mr. Carney's presentation earlier today and I really do appreciate seeing him. The numbers that he gave, if I understood correctly, is that within a decade we should be getting to a four to one ratio of investment in renewable energy as opposed to fossil fuel. Do we have any idea what our number is at CalPERS today?

CHIEF INVESTMENT OFFICER MUSICCO: I'll defer the question to Peter. I will tell you, if I don't know it, then we don't -- then we don't have it. And so I'm -- if Peter has the answer, I'm disappointed in myself for not asking the question. So I think, you know, bringing Peter on and spending the time and energy, which is more than -- you know, appropriately so on really coming forward to all of you and our stakeholders on what our path to net zero is, what our strategy is for sustainable investing is a top priority for us.

And so, you know, I took down a bunch of notes today on what Mark was saying. Even though we've chatted a bunch of times, I'm really eager to come -- be able to come back to you with a very specific plan. Because what I liked about what we heard today is that these are objective goals. These aren't theoretical. These are real problems with data to support the problem, with real targets to data -- with data to support the target and it's our -- our role is to make sure that we're -- we are meeting the challenge. And so we will come back to you with what our plan is in the coming months. And thankfully we have leadership like Peter and his team here to help guide us through that.

MANAGING INVESTMENT DIRECTOR CASHION: Okay. The short answer to your question is that we will have the answer for you later today.

(Laughter).

MANAGING INVESTMENT DIRECTOR CASHION: We were actually just looking at that number, because we're working with each of the asset classes to not only assess what investments we have currently that qualify as climate solutions and transition, but perhaps more importantly looking at where are we going to go over the next decade and the next -- and this year even, in terms of coming up with a comprehensive sustainable investment plan that takes advantage of these opportunities that Mark Carney elaborated on, but also factors in the risks.

So I could quote you a number, but that is from TCFD report, which was, you know, over a year and a half ago. So I'd prefer to give you the exact one and we can share shortly.

Thank you.

COMMITTEE MEMBER MIDDLETON: Thank you. And frankly that is the answer I was hoping to get. I would have been a bit shocked if I'd have heard, okay, we're at X times whatever today.

For most of us who have heard Mr. Carney's opinion that four to one in 10 years is an appropriate standard, that I think should be tested as to what other experts might be out there as to what's an appropriate standard, and what's an appropriate standard for an organization like CalPERS, given what our investment opportunities are, as well as the fact that we want to be a leader. And if four to one is the number that we should be getting to as a society, then perhaps the number that we need to be getting to to establish our leadership role is something different than that.

But what -- what I'm also very particularly interested in is what should be the pace of that transition and that change in terms of our investments, so -- and those kinds of numbers really, what I found very positive about them is it allows us to document where we are in terms of accelerating the transition. And that kind of documentation, in the times that we are in today from a political standpoint, is going to only be more important over the course of the next decade. The pressures we're seeing today are not going to go away and they're not going to lessen. So thank you.

The other part of that was his recommendation that, one, we invest in the transition. So I think we need to really be able to define well what our investments are, and two, that we are taking an active role in influencing public policy, and there's some great opportunities there for us to take and do. And what I would hope to have, and I'm just one voice, is recommendations coming back to the Board as to how can we execute on these kinds of policies?

So thank you.

CHIEF INVESTMENT OFFICER MUSICCO: Thank you.

CHAIRPERSON MILLER: Thanks very much.

I don't see any other requests to speak. And so I think that pretty much covers Item 6b. I want to just double check, did we have any public comment in the room or on the phone for this item?

BOARD CLERK ANDERSON: (Shakes head).

CHAIRPERSON MILLER: No. Okay. And I think we can probably finish up with 6c before we break for lunch, and that's the quarterly Chief Investment Officer reports, if there's any -- anything additional to cover?

CHIEF INVESTMENT OFFICER MUSICCO: Okay. Great. Thank you.

CHAIRPERSON MILLER: Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: As we mentioned earlier, this is our quarterly report.

(Thereupon a slide presentation).

CHIEF INVESTMENT OFFICER MUSICCO: We've revamped the look and feal. The idea is to give you the story behind the numbers. And I'll have Lauren join me to give you the economic background and then I'll just briefly touch on where we are quarter. As you know, as we often say, we're long-term patient investors, but it's important for us to keep the eye on the ball as far as what's going on quarter to quarter as well.

CHAIRPERSON MILLER: Excellent.

CHIEF INVESTMENT OFFICER MUSICCO: And so with that I will pass it over to Lauren.

Thank you.

INVESTMENT MANAGER ROSBOROUGH WATT: Thank you. Thank you for having me here today. Thank you, Chair Miller, Vice Chair Taylor, President Taylor. Lauren Rosborough Watt, Investment Manager in the Investment Office at CalPERS.

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INVESTMENT MANAGER ROSBOROUGH WATT: For the last year and a half now, we have been talking about the slow down -- the global slow down and U.S. slow down following the post-pandemic boost. And we've certainly seen that over the past year of which I will talk to you.

The moves that we have seen have been somewhat bumpy, I would say, globally, but should come out the other side on a macro sense relatively well to date.

I'm going to go through what happened pretty much over the last year and also post the end of the quarter - I know this is a quarterly review - simply to give you some perspective. It does mean today's discussion will be a little bit more detailed -- somewhat more detailed than I normally do and also a little longer, but I promise not to make a habit of it.

All right. So when I look at the returns over the last quarter, and over the last year, and then what's happened, there's been quite a lot going on. So I'm going to back up to Q3 2022. So back then earnings expectations for U.S. corporates for 2023 were revised down, which was subsequently priced into public equity returns. Concurrently, there was an emerging markets situation for emerging and frontier markets. So those economies that were less robust were struggling to maintain debt sustainability in light of higher interest rates, also in lights of rising food and energy prices following the Russia-Ukraine crisis, and also due to a stronger U.S. dollar, as some of their debt is issued in U.S. dollar terms.

Liquidity, in general, was falling across some markets, for example, in the U.S. treasury market and in conjunction with wider uncertainty around the future and the global pull back from quantitative easing. This was reflected in higher-than-typical market volatility. So I'm referring to the moves that we saw September, October 2022 to put into perspective.

What we did see though was little spillover or market contagion. And by the end of the year, financial markets were pricing in this continued slow down globally, have I've spoken to you around, but also some respite, and in particular pricing in that central banks would reduce interest rates as growth and inflation slowed into this year.

There was also some positivity around the reopening of China's economy. Now, specifically for the U.S., market pricing was anticipating the FOMC would end its rate hiking cycle in April. That was after January and March rate hikes. And then pricing anticipated that interest rates would decline in the second half of this year to be 50 basis points or half a percent lower than its peak by the end of this year. And it's quite different now and I'll speak to that as well.

You'll also recall in the first quarter of this year, the U.S. economy experienced another event, and that was the regional banking crisis or situation. And again, this illustrated the vulnerability of interest rate sensitive sectors to high financing costs. We have seen some of that reflected in asset returns, and perhaps Ms. -- we will speak to that a little later.

But what we did see was that official agencies put liquidity provisions in place to support the industry. And this materially reduced the probability of wider market dislocation.

And finally, in the period following the end of this quarter, there was a third event risk in the U.S. and global economy that we've all managed to sidestep - we meaning the global and U.S. economies - and that being the debt ceiling negotiations. The markets since then has responded positively to the move through these negotiations and the signing of the new bill. So as you can see, there's been a number of events and changing market expectation in response to these events, of which we have seen in our asset returns.

Now so far, I've spoken to events and market expectations and some of the movement, but let me speak briefly to the macro economy side. And U.S. real economic activity, it continued to ease back this year. It was an average of 2.1 percent annual average year on year over last year. In Q1, the year-on-year figure was 1.6 percent. Now, there was sentiment deterioration also through last year and also some slowing domestic demand.

But the quarterly outturn itself was modestly robust. So we've had a boost in government spending or perhaps less fiscal drag is one way to put it, less drag from the fiscal side. We've got a tight labor market and also accumulated household excess savings. And those three factors are expected to be a thrust -- macroeconomic thrust throughout the remainder of this year.

Financial markets are no longer pricing in rate cuts over 2023. And it is also not certain whether the U.S. economy will move into a recession this year. What we are seeing is still some divergence. So equity markets more generally, according to equity analysts are pricing for a mild slow down, while the treasury yield curve is inverted, which historically has signaled an impending recession.

Globally, developed market economies also continue to slow with Europe in a technical mild recession and some central banks, Reserve Bank of Australia, Bank of Canada, for example, started raising interest rates again after pausing earlier this year.

So if there's any one takeaway, it would be that given the event risks - we've had three over the last nine months - that the economy, U.S. and global economies have managed, this is a relatively good news macro story. That said, the balance of risks still remain to the downside to growth and the upside for inflation and core inflation.

Thank you for your time.

CHIEF INVESTMENT OFFICER MUSICCO: Thank you, Lauren.

If we could just turn the page to the dashboard, I'll touch briefly on the bits in the dashboard.

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CHIEF INVESTMENT OFFICER MUSICCO: So again, as we evolve to trying to summarize and make this report helpful, this is one of the key things that I'm looking at within my own CIO dashboard extremely regularly.

So first off, we'll show -- we've -- we wanted to make sure that the Board is always quickly aware of where we are versus allocation targets to where we are today, as well as have a quick dashboard on performance. So just on performance, again, we keep our eye on the ball of the long-term return, but we want to make sure everyone is up to speed on where are. So you see the 10-year, the 5-year, and the fiscal year to date return. As far as -- we've also added this concept, and you'll start to hear us talk a lot -- about it a lot more, which is the 5-year cumulative value-add. This is where that dollar value-add concept comes into place. We'll start talking and thinking about that a lot more.

The other part of the dashboard we flagged for you is around volatility. You'll see it's relatively stable with respect -- or it's in line with our strategic asset allocation expectations. Tracking error continues to be relatively low at 15 basis points compared to the 100 basis point limit that we have. And the plan liquidity remains adequate, with a 1.1 coverage when we look at our 30-day stress case.

If you move to the next page, please --

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CHIEF INVESTMENT OFFICER MUSICCO: -- I'll just briefly touch on market dynamics and highlights of the quarter performance, again keeping in mind we think about long-term performance here.

I'll start with fixed income. The global fixed income allocation returned 3.7 percent during the quarter, which was in line or equal to the benchmark return. Within fixed income, the mortgage segment and the high yield segment outperformed during the quarter by 10 and 14 basis points respect -- respectively. The emerging market debt segment and the treasury segment performed in line with their benchmarks. And the investment grade corporate segment underperformed by 31 bps during the quarter, in part due to losses in Silicon Valley Bank, but also just the broader banking sector stress.

On the equity side, we saw during Q1 of '23, all public market segments generated positive returns. As Lauren touched on, the markets were forecasting the Fed to pivot from raising interest rates to cutting rates in order to avoid potential recession. The public equity allocation returned 5.9 during the quarter, which is slightly below the benchmark of 6.1. The factor-weighted segment returned 2.8, which was in line with its benchmark, while the cap-weighted returned 7 percent, which was 16 bps below its benchmark.

While all styles and factors had positive returns during the quarter, growth and quality were the main drivers of global public equity returns. I will flag for everyone, as Lauren just touched on, there does remain a lot of uncertainty regarding the direction of the economy, whether or not interest rates remain higher for longer would cause a recession, which would in turn obviously negatively impact asset returns. So all of us are keeping an eye on where inflation is going as well.

If you flip to the next page on private markets, I'll just give a few high level.

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CHIEF INVESTMENT OFFICER MUSICCO: So for private markets in general we're seeing the rising cap rates and increased interest rates are obviously putting downward pressure on valuations. The economic uncertainty has contributed to the steep decline in real estate transaction volumes, so we're not seeing the same volume of deals being done. I'd say similarly infrastructure, we're seeing a slower pace of transactions as well as private equity deal flow for now.

Despite the pressure on real estate valuations, the fundamentals are mostly stable across real assets, although the office sector still does remain challenged. Rising rates, recent destabilization in the banking sector, and slowing growth are all risks within our private market program.

One area of bright side for us is that well capitalized investors may really benefit from this dislocation that we're seeing in the market. With the number of conferences or chatting with my own network, it's been encouraging to hear that despite us having not participated in some of the private markets over the last decade that we touched on in earlier Board meetings, there is real opportunity for us. We have some, you know, real opportunity to work alongside a number of our partners who are seeing the dislocation and think to us now as being a first call. We've demonstrated that we can be agile, that we have the resources and decision making platforms in place to be agile first calls for these partners.

And so I'm looking forward to seeing how we can participate in some of this market dislocation. That goes for real estate, infrastructure, as well as the private equity market in general.

The next page please on risk.

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CHIEF INVESTMENT OFFICER MUSICCO: As you'll see from this chart that most of the risk in our portfolio is driven by assets that do better in environments of strong economic growth, which does include our public and private equity, real estate, and the more credit-oriented aspects of income. The chart -- this chart we'll show you, which comes from our quantitative risk model, it shows that the contribution to risks from the various asset segments, which gives you a -- from a risk perspective, this gives you this understanding that the fund overall is correspondingly very sensitive to an economic recession.

So for all of those reasons, you know, we're spending a lot of time thinking through risk mitigation strategies. We're making sure that our tracking to the strategic asset allocation is on pace, which I've said it absolutely is, and we continue to use our CIO forums to make sure that as we learn what's going on and what we see going on in the market around us, that we're being responsive, and getting ahead of, where we can, some of these markets dynamics.

And so with that, I'll pause. Hopefully between the report and me touching on some high level pieces, we're starting to give you an easier glimpse into what it is that we're seeing quarter to quarter and as importantly longer term.

CHAIRPERSON MILLER: Yeah. Thank you. And I, for one, really like the format of the presentations and the selection of the material. Very thoughtful and very helpful.

So first, I have a question from President Taylor.

VICE CHAIRPERSON TAYLOR: Yes. Thank you, Chair Miller. So thank you for this report. The way you did it, it's nice to see it a little differently. I think it's a little -- for me at least, it's a little easier to absorb. So I have to ask, because I look at value-add in a million different ways, what is your 5.7 bill -- on page four, the value-add here that you've got -- you've got total return and then the bottom you have value-add, 10-year, 5-year, and fiscal year to date. What does that mean? What is that value-add number?

CHIEF INVESTMENT OFFICER MUSICCO: When we come back to you in the fall with our strategic destination, we have in our minds a very specific number, a real target that we will -- we hope to be able to say to you this is what we want to be held accountable for delivering over a cumulative period of five years, 10 years for dollars value-add.

I'd say I'm -- knowing what I know, and knowing what we've been working with, and where the markets are, and the tools we've had, and the amount of passive investing, and selectively active investing, I'm pleased with this -- these dollar value-add, but I'd like to see the one-year value-add target be more aggressive. I'm not going to give you the answer until I come forward with the strategy, but I can assure you that a two billion target we can be more aggressive than that with what we're going to hold ourselves to for our strategy 2030.

VICE CHAIRPERSON TAYLOR: I'm still confused, Nicole. I'm sorry. So are you saying that these numbers are -- you're adding $5.7 billion to the portfolio over 10 years?

CHIEF INVESTMENT OFFICER MUSICCO: Yes. Yes. That's the value-add.

VICE CHAIRPERSON TAYLOR: Okay. That's what I was trying to --

CHIEF INVESTMENT OFFICER MUSICCO: But if you ask me as a CIO am I happy with that number, I'd say that's a very respectful number. But for us and our ambitions to become a best-in-class investor, we will be more ambitious than a two billion target value-add per year. You will see more come out of us than that --

VICE CHAIRPERSON TAYLOR: Okay. That's what I need --

CHIEF INVESTMENT OFFICER MUSICCO: -- based on our active strategies and everything we have in play, thinking through the 2030 lens.

VICE CHAIRPERSON TAYLOR: Okay. Excellent. Thank you.

CHAIRPERSON MILLER: Okay. Next, Director Middleton.

COMMITTEE MEMBER MIDDLETON: All right. Thank you.

Nicole, you referenced real assets with the word challenges. And we've all, in general media and everywhere else, been reading all kinds of stories about where real estate is moving, most particularly core office building real estate that's been. So could you talk a little bit about the challenges, but more importantly as we start to think long term, is there a change in what we should be expecting and seeing in terms of the role that real assets is going to play in the total portfolio?

CHIEF INVESTMENT OFFICER MUSICCO: Yeah, I'm happy to answer. And as always, I'll bring up Sarah Corr as well to add to any comments that I might have.

You know, the world right now is all looking through -- is looking through the same challenges for real assets in particular. For our program, when we've done our deep -- our deep dive, given a bunch of work that was done well before I arrived on the scene, we have a well diversified program for the most part across sectors. And when we look at each of the individual sectors in which we are investing in real assets, most, as I mentioned, are performing well, save for the office piece, which all of us around the world are all grappling with the change in market dynamics, where we are with interest rates, et cetera.

I think a flight to quality in general is going to be a theme that you'll her across our investment programs, but in particular for real estate. I think aligning ourselves with partners that understand that we need appropriate fee structures in place that reward outperformance, but not just pay to play, is going to be a very important piece of our strategy going forward. The team has done a very good job at having a -- they whittled down -- again, well before I arrived, they whittled down the number of partners and the groups, and even within real estate and infrastructure a very concentrated program across very specific partners within each of the different sectors that we have access to.

I think that that's a strategy you should see us continuing to deploy within real assets, because there absolutely is still a role for real assets in our program. I think where you'll start to see more of a thematic shift, if you will, will be in our infrastructure program. I think there's a lot of opportunity for us to be investing in infrastructure through a sustainable investing lens to kind of kill two birds with one stone. So thinking about where can we be investing in infrastructure that helps us progress our sustainable investing thematics would be an example. And back to the real estate side, as we said, I think this flight to quality using our sustainable investing lens when we choose who we're investing with, and how they are deploying their capital, and whether they themselves are thought -- are thought leaders, best in class in investing sustainably will become more and more important us as we move forward.

So maybe I'll shift to Sarah to add any other comments there.

MANAGING INVESTMENT DIRECTOR CORR: Yeah, I'll just add a few high level comments and I'll have more comments in my later presentation.

As far as the flight to quality, because we have focused so much on core in the real estate portfolio, the port portfolio that we own is high quality. That does not mean that there is not going to be write-downs in it and there's not going to be problems in it, but it is a high quality portfolio that we currently own, well located assets, well positioned. So you will see some pressure on the valuations, but it -- I think it will sustain through the longer term.

As far as office goes specifically, we are sort of thinking about that. I'd prefer to talk about that in the strategy session, go forward strategy session in closed session later this afternoon.

COMMITTEE MEMBER MIDDLETON: Okay. Thank you.

CHAIRPERSON MILLER: Okay. Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you very much. Thank you, Nicole. I just want to bring up my question here. I am looking at -- well, first of all, I want to kind of add a little -- a little addition to what President Taylor had mentioned about the value -- the dollar value added. Now, in the metrics -- in the matrix that you mentioned, the 10-year cumulative value added is like 5.7 billion, right? And I also noticed that in the forecast actionable tracking error, we have 50 basis points. From my understanding, we have a hundred basis points, which is part of our policy limit. Now, do we have -- because of that, we have an opportunity to increase our active investment. And hopefully, in the long run, that particular cumulative value-add should be higher. Is that -- is that right or is that -- is that the vision? I'm just trying to understand that.

CHIEF INVESTMENT OFFICER MUSICCO: That is the vision and that's why I -- when I think about am I -- am I proud, is this what I'm holding -- is this the standard I'm holding us to --

COMMITTEE MEMBER PACHECO: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- I'm saying to -- we as a team all believe we have real opportunity here by doing more in active investing over time, whether through public or private markets. We have a real opportunity in front of us to be adding more dollars value-add over time, because we are building our expertise, if you will, into some of the more dollar value-add generating type strategies. And so we're looking forward to being able to show you over the long run that those numbers will be bigger than what they appear here.

And we have lot of -- there's real benchmarking for us to take a look at for this. We spend a lot of time thinking about how we compare ourselves to other and where we -- other organizations and where we want to be to be deemed best in class. And so we're not pulling the numbers out of thin air. We're going to set ourselves with reasonable goals. And it's just again if there's a number on the screen, equally important to think about through a long-term lens, because you're going to get ups and downs in the markets obviously, in addition to total return would be for dollars value-add. So as long as everyone is geared and understand that the dollar value-add concept is a long-term, rolling, cumulative concept, then it's a useful tool for us to assess whether we're getting enough bang for the buck when we're investing our active dollars --

COMMITTEE MEMBER PACHECO: Fantastic.

CHIEF INVESTMENT OFFICER MUSICCO: -- active risk.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: A hundred percent absolutely agree with everything that Nicole said. The only thing I would add -- two quick things. Number one, remember that that 15 basis points of actionable tracking error --

COMMITTEE MEMBER PACHECO: Um-hmm.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: -- that includes only the public assets --

COMMITTEE MEMBER PACHECO: That's right.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: -- and the allocation effect. The total dollar value-add includes that, but also includes risk being taken in private assets. And, in fact, the lion's share of the dollar value-add that you see is coming from the private assets.

COMMITTEE MEMBER PACHECO: I see now. I understand. And actually that's -- that gets to -- me to the next question I had, which is on slide number 6. And, you know, I see that the private equity -- equities had a really meaningful outperformed over the three- and five-year period. You know, I'm just curious how can the team sustain that premium return over the public equities, if you guys can elaborate on that?

CHIEF INVESTMENT OFFICER MUSICCO: Sorry, can you just -- can you just clarify what you're saying?

COMMITTEE MEMBER PACHECO: Sure. Sure thing. So, yeah, so the public equities -- you know, I noticed it right there the five- and three-year charts right there, they've had a pretty robust -- they pretty -- outperformed basically in the five- and 10-year. And I just want to know how the team may or can sustain that premium return over the public --

CHIEF INVESTMENT OFFICER MUSICCO: Public within the private equity program itself, yeah.

COMMITTEE MEMBER PACHECO: Yeah. So between the -- I'm looking at between the private and the public.

CHIEF INVESTMENT OFFICER MUSICCO: Absolutely. This is really where building up that skill set in direct investing and co-investing is going to make or break our ability to do that. Separate from the mark -- the pressure -- the valuation pressures and everything that -- the market dynamics, if you will, where we're all expecting that valuations do come down, separate from that, our ability to generate outsized returns within private equity, there's no mystery to it. It's our ability to do it in a more cost efficient manner, which comes in the form of co-investment, which is why the team is so focused on making sure we have the right partners that give us access to deals of scale, so that we can be deploying capital in a more efficient manner.

COMMITTEE MEMBER PACHECO: Excellent. Thank you very much for those comments.

CHAIRPERSON MILLER: Okay. Controller Cohen.

COMMITTEE MEMBER COHEN: Great. Thank you. Good afternoon. Is it afternoon? Yes, it is afternoon.

So I just had two questions that I wanted just to go over. So although private equity is -- although private equity has had negative short-term returns, it has outperformed benchmarks in three of the five-year periods. I'm specifically speaking from slide 6. And I was just wondering do you expect this trend -- do you expect this trend to continue?

CHIEF INVESTMENT OFFICER MUSICCO: The trend of outperformance?

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: Yeah, I mean, that's -- that is our -- that's the philosophy behind us making sure that we have an allocation to private markets in general, private equity in general. The measurement of private equity performance is done on a lagged bases. So you don't -- it's not a like-for-like. It's hard to make those comparisons in the short period. It's much easier to get a gut feel for whether the asset class as a whole is performing when you look at over the long period, just because the way the measurements are done on a lag. But yes, we absolutely believe that we can still get a premium for investing in private markets. Our program will benefit even more so by moving into more of that direct investing approach that is within private equity, because the fee and carry bits that are very expensive to a private equity program start to average down when you're able to deploy capital a lot -- fee free, carry free capital alongside fund investments.

COMMITTEE MEMBER COHEN: Okay. So my second question is is given the current financial market forces, should CalPERS be making any tactical changes now to preserve liquidity in returns?

CHIEF INVESTMENT OFFICER MUSICCO: Right now, I mean, we're very -- we're very comfortable, and we've become very good at staying on top of both through the systematic approach we're using to measure liquidity, but also the tools we've been putting in place. So from a liquidity perspective --

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- I think the team is very much on top through that total fund optimization activities, but even -- again, leading up to before I arrived, CalPERS has a very robust tool in place to make sure that we're on top of liquidity, which we're very comfortable with. We're also very comfortable with, you know, where we're leaning towards for our strategic asset allocation. There's complexity -- if you -- if you dig into the weeds of each of those asset classes though, there are ways for us to be deploying the capital more efficiently. So when I think about tactical, I'm not thinking about it in a traditional make it like tilt one way or the other. We're heading in the direction of investing into the SAA. We might be ahead of pace and we'll come back to the Board if we think that that's going to be the case.

If we're ahead of target, if you will, it takes a bit of time to leg into a strategic asset allocation. So we may, like we did with small strategies right now, get ahead, so that we're at the SAA. But beyond that, tactically, to use the phrase differently, it's more about execution and approach to execution. So making sure we're very, very clear on who the partners are, that they're best in class, that we're leaning into sectors that we think -- that we -- that we have conviction in, making sure that we're investing the dollars efficiently the way that we just described through more direct investing approaches. Those are the tactics we'll use as opposed to tactical asset allocation where we're veering away from what we otherwise told the Board we believed in through the SAA.

COMMITTEE MEMBER COHEN: Um-hmm. So to use your words, execute, do we -- do you have the resources, does your team have the resources that you need in order to properly execute?

CHIEF INVESTMENT OFFICER MUSICCO: Yeah, we're build -- we've been building and we've had great traction in the market. It takes time to bring individuals on. And when we can't bring the individuals on directly into CalPERS, we spend a bunch of time finding strategic partners to help us deploy the capital, to bring the resources to bear, kind of pulling the resources in, if you will.

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: Over time though, we need to get to an equilibrium, we need to get to a strategy that makes sense for the resources we have. Right now, we're doing a combination of knowledge transfer to build the in-house capabilities and leveraging outside capabilities through partners.

COMMITTEE MEMBER COHEN: So when I hear you listen -- when I -- when I listen to you answer the questions, it sounds like you're saying, yes, this is good. This is where we are right now. However, in the future, it's like you have an idea on where you'd like us to be.

CHIEF INVESTMENT OFFICER MUSICCO: Well, the idea being that over time the more that we can invest in a cost effective manner, which is -- which is, aka direct investing. That's a very different skill set --

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- than someone who even co-invests or someone that fund invests, as one example for one asset class.

And so it's very difficult to bring those resources in-house, but that doesn't mean we can't do it. It just means we have to find partners that we feel are aligned with what our mission is and what we're trying to accomplish and make sure we're getting access to the deal flow that they have in a cost efficient manner, i.e. co-invest.

COMMITTEE MEMBER COHEN: Do you have a timeline in mind? Are you -- like when that person manifests, you're going to jump on it, and snap them up, and bring them in-house or is it -- are you thinking, okay, end of fiscal year, or next year, or is there some kind of an action timeline associated to building us and getting to this destination?

CHIEF INVESTMENT OFFICER MUSICCO: We can -- we can get to the strategic destination with the resource plan we have in place today --

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: -- because we're always supplementing it. It's a reality of being a public pension plan. I can't hire people and pay them a carry, if you will, like you can in the outside world with a -- and we don't try to compete for those resources, but what we do do is say if this is our strategic destination and here's where we want to get to, we're going to be able to get there a good chunk of the way with in-house capabilities. We're going to spend the next five to seven years leveraging and knowledge transferring from strategic partners, and work with partners along the way.

And so the Board should hear loud and clear, I don't have any concern that we can't get to our strategic destination. It's going to be a combination of resources we have, the tooling, and the knowledge, and the learning that we're going to bring to our own workforce, as well as leveraging outside third parties. It's not that -- that approach is no different than even some of the organizations around the world that have very strong in-house direct deal teams. We're not going to have that tomorrow, but we will grow into that, either through training over time -- and I've told the Board historically that's like a 10-year journey. It takes a long time to learn how to do direct deals. In the -- in the meantime, we absolutely have the in-house capabilities to work alongside smart partners. And we're seeing that already. We deployed almost $4 billion in co-investment and that's because our team is working hand in glove with smart partners.

And so you do three, four, five deals, all of a sudden you're getting better and better at being a direct deal individual, you make sure you have the right mentoring and training culture in place, and that knowledge transfer starts to happen organically within the organization. And over a period of five, seven, ten years, we're able to say hand in heart that we're capable in-house of doing a lot more on our own versus today where we need to rely on other fund investors.

COMMITTEE MEMBER COHEN: Thank you. Mr. Chairman, I have no other questions.

CHAIRPERSON MILLER: Thank you, Madam Controller.

Excellent. Well, I think that covers all the questions. I see no more requests to speak and I don't believe we have any public comment on this item. So I think now we'll break for lunch, 1:15 sound good?

A little more?

VICE CHAIRPERSON TAYLOR: I'm thinking 1:30.

CHAIRPERSON MILLER: Okay, 1:30. So I'll plan to reconvene the Investment Committee at 1:30 after everyone has a chance to have lunch and stretch their legs, and we'll commence with 6d at that time.

Thanks. Enjoy.

(Off record: 12:42 p.m.)

(Thereupon a lunch break was taken.)

AFTERNOON SESSION

(On record: 1:33 p.m.)

CHAIRPERSON MILLER: Good afternoon, everyone. I hope you all had a nice break. We're going to reconvene this meeting of the Investment Committee and we will pick up with Item 6d, the private equity annual program review.

CHIEF INVESTMENT OFFICER MUSICCO: Great. Thank you very much. I just thought I would just reintroduce again Daniel Booth. He's our Deputy CIO of Private Markets. He oversees all private market activity with private equity, real estate, infrastructure. And we're just delighted to have him. He's already really rolled up his sleeves and hit the ground running. I was teasing him that when I first joined, I really tried hard just to do a look and listen for 90 days. And I said I think I lasted like 45.

(Laughter).

CHIEF INVESTMENT OFFICER MUSICCO: And he's already rolled his sleeves up, so I -- we're two kindred spirits in that front. So anyway, welcome, Daniel. Thank you. And Anton, you know, I'm really excited for you to see the progress. Again, when you think about how long Anton has been here what he and the team have been up to. Incredibly proud of the work that's been done there. And hopefully, you'll got a real sense just on some of the questions that were asked earlier today about progress being made, resources being used, how we leverage in-house resources and external smart friends, if you will, Anton will get into the weeds on that with you as well. So without further delay, Anton. Thank you.

(Thereupon a slide presentation).

MANAGING INVESTMENT DIRECTOR ORLICH: Thank you, Nicole for the introduction and for all your vision and guidance in the implementation. And thank you to the Committee for the opportunity to present today.

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MANAGING INVESTMENT DIRECTOR ORLICH: These are the topics we'll cover, program overview, market environment, portfolio performance, and operational updates.

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MANAGING INVESTMENT DIRECTOR ORLICH: Just to set the stage on the role of private equity. I know we've covered this quite a bit, so I'll keep this brief. But the role of the asset class is to enhance the return that CalPERS receives for the equity or the ownership risk that it takes to harvest the liquidity premium in a way that adds ben -- value to the beneficiaries. The middle section of the slide shows a snapshot of the portfolio as March 31st, 2023 and provides a starting point to see the opportunities to diversify the portfolio.

And the final section highlights CalPERS Investment Beliefs. A long-term horizon speaks to obtaining return in exchange for liquidity. And cost management speaks to co-investing, which the CIO highlighted in her presentation immediately before the lunch break, and that is covered further in the presentation.

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MANAGING INVESTMENT DIRECTOR ORLICH: This graphic provides a breakdown of net asset value and unfunded commitments by vintage year. In other words, it is a breakdown of the 55 billion dollar figure on the prior page. The unfunded figure stands at about $26 billion and includes commitments in 2023. Just as a refresher, much of private equity investment is through drawdown structures. Commitments are made with a private equity manager and those are gradually called upon. Until it's called, it remains and unfunded commitment. As it's called, it becomes net asset value.

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MANAGING INVESTMENT DIRECTOR ORLICH: The portfolio is diversified in some key areas, but there are significant opportunities to further diversify it, such as by strategy and by geography. We can point to diversification with managers, and industry, and underlying portfolio companies. The final bullet flags the long-term priorities for staff to realize the executive leadership's vision in making the portfolio innovative and resilient. Several of these will be discussed further in the presentation.

As you can see, there's a heavy emphasis on the United States geography representing about three-quarters of the portfolio. And staff is looking for opportunities to internationalize it further. When it comes to strategy, the portfolio is also almost three-quarters in buyout. And there are opportunities to expand it in venture and growth, which was a key point in consolidating the private equity and the growth and innovation pipelines.

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MANAGING INVESTMENT DIRECTOR ORLICH: A critical way to diversify the portfolio in addition to geography and strategy is by structure, that is to do more co-investment. And this is an alternative to the fund-based approach. However, it exists as a complement to the funds based approach and does not entirely replace it. Co-investment is one of the most effective ways to address costs. Importantly, many cost mitigation measures in private equity come at the expense of net returns, but increasing co-investment is a rare opportunity where reducing costs goes hand in hand with improving net returns.

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MANAGING INVESTMENT DIRECTOR ORLICH: While staff monitors the economy, the main point here is to characterize our implementation as consistent. We're sensitive to the macroenvironment. We pay attention to its impact on the portfolio, but we would like to deploy consistently regardless of the macroeconomic environment.

Ironically, the more pressure there is macroeconomically has often been in conjunction with better vintage years or investment periods in private equity. It's hard to time those strong vintage years, so it's critical to be consistent in the deployment.

Key themes besides consistency in deployment are ESG frameworks, which we'll discuss in detail, the shift to co-investment, and there is a dynamic now with many of our peers overallocated to private equity to access managers that historically have been difficult to obtain allocations with. And that's something that staff hopes to capitalize on.

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MANAGING INVESTMENT DIRECTOR ORLICH: This graphic shows the PE team has been adding returns relative to the public equity markets and to the policy benchmark. The policy benchmark has embedded in it a premium to public equity performance. That's why we break out a comparison to the MSCI world and to the policy benchmark. In either case, the program has added value on the 10-, 5-, 3-, and 1-year periods.

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MANAGING INVESTMENT DIRECTOR ORLICH: We're very proud of the accomplishments on the prior slide, but slide 9 does provide an alternative measure of performance. The takeaway here is that PE can do more to deliver returns for CalPERS beneficiaries. In contrast to the prior slide, this one compares CalPERS private equity to two indexes that capture the broad opportunity set of private equity investments. For the most part, based on these measures, CalPERS can find additional opportunities within PE to improve returns in the asset class, and as a result to the overall portfolio. In other words, build on our success relative to the public equity markets, success that we've already delivered.

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MANAGING INVESTMENT DIRECTOR ORLICH: This page highlights the most important lesson in the last 10 years, consistent commitments. The graphic on the right shows that the underploy -- underdeployment that occurred happened to be in under -- in overperforming vintage years. The point is not to say that CalPERS should have timed the market better. That is very difficult to do, and frankly it's an unreliable way to generate returns. The goal is to be consistent, so that those strong vintage years are not missed. If you decompose the underperformance that has occurred relative to the opportunity set, you can trace it to this issue more than any other.

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MANAGING INVESTMENT DIRECTOR ORLICH: The second point in providing more strategy diversification in the PE portfolio relates to movement away from buyout. Relative to the widely used opportunity set benchmark presented here, CalPERS is overrepresented in the buyout strategy.

The merging of the growth and innovation and private equity pipelines last year has begun a process to add diversity by adding venture and growth. To be clear, addressing this issue will take several years and is characterized by partnering with successful firms in a strategy that is documented to have performance persistence. By that, we mean a manager that has performed in the past is more likely to outperform in the future.

Because fund sizes of such managers in venture remain limited, they do not tend to grow. There is a competition for allocation with those managers. And since they are known to be highly or likely to perform in the future, they are highly oversubscribed. It will take a long time to generate the relationships and allocations with these managers. To put the venture component of the growth and innovation expansion of the portfolio into context, we're talking roughly 10 percent of the 13 percent private equity allocation, so roughly one percent of the overall portfolio, and that would be pursued over a multi-year period.

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MANAGING INVESTMENT DIRECTOR ORLICH: This speaks to the co-investment opportunity, one that we've already begun to deliver on in a very strong way, especially over the last two quarters with approximately $4 billion of co-investment. On the left, we see that co-investment performance has been in line or slightly better than fund performance. However, the amount deployed in co-investment has been relatively minor, so there's a great opportunity here to improve net returns. You can see on the right the increase that we've had in co-investment since 2019. And the last two quarters, the approximately $4 billion represents the highest amount in absolute and relative terms for any six-month history of CalPERS.

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MANAGING INVESTMENT DIRECTOR ORLICH: Staff has been working hard to incorporate ESG into private equity, the privates portfolio and the overall portfolio. The next six slides provide highlights of that work. And this particular one shows the update on the public sector outsource policy. Over the last 12 months, the policy has been effective as evidenced by no waiver requests. And this has been it seems a value-added program.

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MANAGING INVESTMENT DIRECTOR ORLICH: We'd like to introduce here three aspects of staff's ESG work. It's no by means exhaustive, but we would like to indicate the tremendous work we do here and the exciting developments that are in store to improve net returns, not at the expense of net returns.

First, further integration in investments, that's investment decisions, portfolio monitoring, and exiting of investments. As part of that, Peter Cashion has joined as the MID for sustainable investments and he will help each asset class in its implementation. There are aspects of ESG that apply to all asset classes and there are parts that are specific to a given asset class. And in conjunction with him, we will be able to navigate those differences.

A second highlight is the ESG Data Convergence Initiative. This is key to measuring progress. And without the data, we won't be able to see the impact, not just of our portfolio, but transitioning the economy in all the respects that we've been talking about including climate.

Lastly, the broader implementation representation of employees in ownership. An example of this is Ownership Works. There are other versions of it. Various general partners that we work with have their own increases of representation in their portfolio companies, and there's been evidence that this enhances returns.

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MANAGING INVESTMENT DIRECTOR ORLICH: On the left side of the slide, we see that ESG, and within that diversity and inclusion are significant focuses for the portfolio. Project Mosaic has already been committed to and begun. Engagement with managers and the application of those lessons with thought leaders outside the portfolio is underway. And we have used ESG frameworks in our investment decisions, both by including ILPA ESG questions and adding our own.

Project Mosaic we'll discuss in more detail, but this is a rare opportunity to use the fund of funds structure, which the portfolio usually avoids because of higher cost to write smaller checks, which are going to be more impactful on advancing the investment landscape with more diverse asset managers.

And this way, we can see it as an extension of the diversity theme. Just as we diversify by structure, and geography, and strategy, diversity in human capital is associated with higher returns.

The detail on the Project Mosaic is available on their -- the slide 16.

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MANAGING INVESTMENT DIRECTOR ORLICH: We partnered with two firms, TPG and it's NEXT Strategy and GCM Grosvenor. Between the two, it represents $1 billion of commitments. Think about this focus as the smaller sized checks, which would be too small for staff to write on its own, but ironically are the most impactful, because they're putting firms on the map, diverse entrepreneurs on the map, and will rise to the next generation of investable opportunities for CalPERS scale. I would like to emphasize we do have diversity in our direct portfolio, but in many ways those investments are with managers that have already arrived. And we target firms that over oversubscribed.

In that area, CalPERS investment is not making a difference between the return. It's not adding to the diversity of the landscape. This program is.

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MANAGING INVESTMENT DIRECTOR ORLICH: This speaks to the data convergence project which will be a long-term approach to maximize the participation of GPs and LPs. The process of adding both general partners and limited partners is itself focusing on the key initiatives that we've been discussing today, particularly in regard to climate.

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MANAGING INVESTMENT DIRECTOR ORLICH: This is an example Ownership Works of efforts to increase the representation of shareholders, to increase alignment and therefore improve returns, and to address the issue of wealth and equality. This is more in the beginning stages and it's not the only type of program along these lines, but we're actively involved in increasing participation and Ownership Works.

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MANAGING INVESTMENT DIRECTOR ORLICH: Echoing the discussion of the themes in the presentation, these are our priorities for the fiscal year. Continued integration and expansion of ESG initiatives. Increasing co-investments. We are at a very strong run rate, but co-investments are a treadmill. They have to be constantly sourced and executed upon. Geographic diversification will require some manager selection and also harvesting co-investments in geographies in which we're underrepresented. Building the venture program as part of integrating the growth innovation and buyout strategies. And we are working on ways to improve staff efficiencies and focus staff on high value-added work.

With that, open up to questions.

CHAIRPERSON MILLER: Okay. First, I have President Taylor.

VICE CHAIRPERSON TAYLOR: Thank you, Chair Miller. Anton, thank you very much. This is a very thorough presentation. And I have a couple of comments. First, I just -- I appreciate the sustainability efforts that you guys incorporated into the report here. As I'm looking at it, it looks like we're looking at some data. We have the data convergence project. We have the Ownership Works. I think we're all -- the whole -- the Board is very supportive of all of this and I think there's more that we could do.

But one of the -- first, I had a question. I'm trying to figure out -- earlier on you said -- mentioned relationships, that you're building relationships, that there was a little -- I just -- I don't remember what exactly I heard, but there was a little trouble with relationships it seemed like you were inferring. I'm not sure. Can you -- do you remember what it was you said? It felt like it was uncomfortable or something.

MANAGING INVESTMENT DIRECTOR ORLICH: No, I didn't intend to convey that. Sorry, if I did. My point along the ESG lines was to seek out the best thought partners on ESG, whether they're in or outside the portfolio, and to apply the takeaways from those deliberations in the portfolio, so that we're best in class in ESG relative to all institutional investors, domestic or foreign.

VICE CHAIRPERSON TAYLOR: Okay, I see. So then a question would come out of that, which is have you talked to outside folks, such as the stakeholders of some of the private equity companies. So, for example, they own, I don't know, let's say a grocery store. Have you heard from those folks, the folks that have asked to be heard, you know, whether it's through freedom of association or harassment charges or anything like that, have you heard from those folks?

MANAGING INVESTMENT DIRECTOR ORLICH: As part of the monitoring function --

CHAIRPERSON MILLER: It's not a. --

MANAGING INVESTMENT DIRECTOR ORLICH: -- we're looking for an understanding about how our partners are tackling those issues.

VICE CHAIRPERSON TAYLOR: Uh-huh.

MANAGING INVESTMENT DIRECTOR ORLICH: And so those do bubble up in media. Sometimes we have direct inquiries. Also, there are organizations that serve as conduits to filter those concerns and they tend to be a really strong resource to highlight on the most acute issues that require addressing. But I think in those discussions I was referencing earlier, we're seeking to be proactive and not just responsive to abuses that we find. To be sure, when we find problems, we engage with our investment partners to make sure that they're addressed. But I don't think that, you know, the aspirations that we have are best served by that alone. That's table stakes. We need to be addressing abuses and issues. But we're trying to find, especially with the SI initiative and the new MID hire, ways to be more proactive.

VICE CHAIRPERSON TAYLOR: Okay. Great. So then I'm going to leave it here and let others give you some ideas on how to be proactive.

CHAIRPERSON MILLER: Okay. Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you. Thank you, Chair Miller and thank you, Mr. Orlich, for your presentation. Really appreciated it as well. You know, I really appreciate the insight you provided on your current -- on the current concerns we have and the deployment themes, especially staying on target to max -- to maximize our rate of return in the long run.

What I want to know is around the deployment of theme you highlighted associated with our focus on managers that employ the ESG framework. And, you know, when I -- you know, since we are moving -- you know, we're moving our investment approach in this particular place and emphasizing our capital allocation more to the private equity, because as we know, private equity has been one of our most best performing profile classes in the long run. You know, I want to know if you -- you know, and also Ms. Walker had mentioned earlier this morning with Mr. Carney about the private equity principles that they were -- you know, they are -- they seem -- people seem to be more, you know, aligned with that. And I wanted to know your thoughts on that particular subject matter, especially at certain organizations like the American Investment Council has certain principles of that nature and others. And I just wanted to have your thoughts and how that could be thought about. Thank you.

MANAGING INVESTMENT DIRECTOR ORLICH: So this is definitely Peter Cashion's area of focus -- one of his areas of focus. I think that right now there's been a high amount of subscription to those principles and the different associations. And it's really an earnest effort now to deliver on the aspirations of those principles. I think you'd be hard pressed to find the respected organizations in that area that we're not signed up with and it's really about achieving execution on those principles.

So that's where we're, you know, working very hard. I think a key point too I would make is we do tremendous work on the -- on the public portfolio in terms of voting proxies and so on. But I would underscore that there are real opportunities in private equity, because a vast majority is through buyout, which indicates control of companies, for us to work with our investment partners to secure positive change in a way that we just don't have the levers in the public portfolio.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: And many of the issues that we're talking about, public companies are, I think, falling behind --

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: -- private companies, because of the work of institutional investors working with their partners to change the emphasis on ESG in a way that hasn't happened with many publics.

COMMITTEE MEMBER PACHECO: I see.

MANAGING INVESTMENT DIRECTOR CASHION: And maybe I'll just add that in the public -- in the private equity space, there are really interesting opportunities across growth, climate tech. So these are the new technologies that will drive a lot of this needed change, and also in the buyout space, as Anton mentioned. So there's really interesting opportunities, both through funds and co-investments in these areas.

And then with respect to the ESG integration, the standard is already very high. And I think that's reflective of CalPERS' commitment to this area, and we -- what we have in the governance and sustainability principles.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR CASHION: We use questionnaires that are based off of the Principles for Responsible Investing and ILPA. As Anton commented, we're a founding member in Convergence and on the subcommittee of ESG for ILPA, the Limited Partner Association.

So -- but we really want to -- this is a fast moving area in terms of evolutions and best practice, so we're currently discussing with some consultants to do a review of our overall ESG integration to see if there are any areas where we can further deepen it, improve it, and be best in class in this -- in this important area, because we see it not only as a risk mitigant, but also as an opportunity driver. So for us, it's really top of mind, not just in private equity, but across each of the asset classes.

COMMITTEE MEMBER PACHECO: Yes, I'd like to follow up with that particular thing. I mean, I would like you to elaborate a little bit more about what you exactly are elaborate -- alluding to with respect to the Principles of Responsible Investing? If you could just elaborate a little bit more? You mentioned something like that.

MANAGING INVESTMENT DIRECTOR CASHION: Sure. Well, these are long-standing principles and with frankly more focus on the S and the G.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR CASHION: I think historically that has been the focus. So we want to ensure that as we do this review with an external consultant that we're fully incorporating the "E" component, so the environment and the climate --

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR CASHION: -- and factoring in those risks in our assessment, particularly as Mr. Carney mentioned earlier, the climate risk related to both physical risk and transition risk. And that's not only done at the time of origination when you're reviewing an investment, but also on your -- when you're evaluating your overall portfolio.

COMMITTEE MEMBER PACHECO: You know, I -- thank you for that comment. You know, the reason why I'm bringing this up is because, you know, a few months ago, we had a -- you know, we had a stakeholder come to us about a particular issue with respect to one of our buyout firms, Blackstone. And, you know, it's my understanding that the Department of Labor recently found one of their portfolio companies, the Packers Sanitation had, you know, employed at least 102 children at 13 plants across eight states in conditions of oppressive labor -- child labor. And, you know, these kid were working overnight shifts and hazardous -- in hazardous conditions and with hazardous chemicals, and some of them were actually injured.

And basically the Labor Department, from what I understand is, that they -- their findings said they had a -- they represented a -- this particular portfolio company from Blackstone said they had systematic failures across their entire organization to ensure that their children -- that their children were not working in violation of the law. So that's disturbing in itself.

And, you know, and I think also in the -- there was an episode that was actually followed up in 60 Minutes that mentioned that there's no way that this was just a mistake or a clerical error.

You know, what I'm trying to understand is is because it's -- you know, these kind of situations happen in these particular areas and having some principles in place that may help -- may help us, you know, make sure that in the future this is not going to happen again.

And, you know, my particular -- you know, my understanding is is that some actions were taken, but I -- you know, I would like to know, you know, what -- you know, what staff said -- you know, what staff asked Blackstone in terms of explaining what actions had been taken or will be taken against the Blackstone executives who served on those boards, and -- because during those periods of time when the company's children -- child labor violations for their failed oversight at this company.

And moreover, I would also, you know, just make sure that, you know, we have some sort of system in place to not -- so that all our funds are good when -- we don't have these kinds of violations. So maybe have some sort of other elaboration.

But I would like you to address the first one and see -- and ask what has happened. I know it's a very uncomfortable subject matter. It's even uncomfortable for me to ask it, but sometimes we have to ask these difficult questions. So if you -- if you may. Thank you.

MANAGING INVESTMENT DIRECTOR ORLICH: I'll give you my two cents and then Peter can jump in. I mean, I think this is a great example of the need to stay on top of issues. And it's - you know, to President Taylor's question - an example of our swinging into motion through monitoring of a portfolio.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: So the fact pattern around the PSSI portfolio company is outrageous. And as a result, we aggressively pursued it. We're not invested in the company, but as you point out, Blackstone is a major investment partner.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: And so we did have standing to speak to the issue. So we engaged intensely with Blackstone on it. Made clear how reprehensible the findings were from the DOL. And it wasn't just about the reactive part, it was -- you know, and I'll talk to the punishments that were delivered appropriately so, but also working with Blackstone to understand, as you said, do they have the principles in place --

COMMITTEE MEMBER PACHECO: Right.

MANAGING INVESTMENT DIRECTOR ORLICH: -- to keep this from happening again?

Now, I think we can all agree, you know -- and this is what makes it so reprehensible, the child labor aspect of it --

COMMITTEE MEMBER PACHECO: Yes.

MANAGING INVESTMENT DIRECTOR ORLICH: -- that no one would accept -- no principle would accept that. So it's also about implementation and making sure that the governance is there. And I think that the issue here was more around the governance point.

COMMITTEE MEMBER PACHECO: Yes.

MANAGING INVESTMENT DIRECTOR ORLICH: Although other cases, you know, we need to have the focus on the principles.

So Blackstone's senior leadership we didn't just have a dialogue. We demanded they come to Sacramento. We engaged with the senior leadership of the firm. We asked for a detail of all the actions that were taken to hold people accountable and the changes in their investment processes and monitoring to make sure that it does not happen again. Blackstone's leadership made clear to us they also found it unacceptable, and made clear that it is not consistent with the values of the firm. But it goes without saying, it's unacceptable to CalPERS staff, CalPERS enterprise, and the people of California.

COMMITTEE MEMBER PACHECO: Yes.

MANAGING INVESTMENT DIRECTOR ORLICH: I want to give you some examples of the steps that were taken. The management of those plants has clearly been replaced. There's new management at PSSI, including at the highest levels of the executive positions, but also the Board. There is now a detailed 13-point plan on employee verification. And I'm focused on that, because that was the process point where things broke down.

COMMITTEE MEMBER PACHECO: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: There's been settlement with the Department of Labor, along with paying a fine. And we've received assurances after encouraging Blackstone that they will engage in a more constructive manner with labor representatives. It's -- that's not an exhaustive list, but those are the highlights of our conversations with Blackstone.

COMMITTEE MEMBER PACHECO: Thank you, Mr. Orlich. I appreciate that. I do. I think that is -- that seems -- I mean, with respect to the Chair -- I mean, the board of directors, now you mentioned there was some action. Who was -- was there any replacements or anything like that? Did they replace some individuals or...

MANAGING INVESTMENT DIRECTOR ORLICH: There were replacements with individuals on the Board and in the senior executive ranks.

COMMITTEE MEMBER PACHECO: So not just the senior executive ranks. This -- I know this is something else that I was researching on Blackstone. And I noticed on their website they have this Monday meeting that they do every Monday. And they -- they have -- they hash out with -- they talk about all their portfolio companies and so forth. You know, how -- how is it that we've in -- we've invested -- we've invested in -- you know, excuse me, a lot of money over the years with these companies and this happened? I mean, was it some over -- some oversight or some mecha -- some processes system that was -- that wasn't seen? I'm just -- it just seems so blatant and I'm just curious.

MANAGING INVESTMENT DIRECTOR ORLICH: The -- you know, I do think that there are some issues here that are broad in terms of the border crisis, the impact on the companies. You know, I don't want to make excuses. I feel as if any one incident is so outrageous that, you know, it's unacceptable. So, I mean, if I went through numbers and I said it's a small fraction of the employees of the firm, et cetera, I think it doesn't provide enough condemnation of what happened.

We are talking about, you know, approximately a hundred cases on a base of 70,000 --

COMMITTEE MEMBER PACHECO: Yeah.

MANAGING INVESTMENT DIRECTOR ORLICH: -- but no case is acceptable. You know, there was aggressive questioning around the ESG frameworks that they have in place. We benchmarked their ESG frameworks, and Peter can speak to this, relative to other, you know, private equity firms as part of that analysis.

We talked about their activities and investment changes since this 2018 investment where they stand today. And so I'll let Peter speak to those. But I do think we want to, you know, put it in context. And I think the lesson here overall is if we stay on top of the issue and force our partners to stay on top of the issue, then we can have more success in delivering on ESG principles even relative to the public markets.

MANAGING INVESTMENT DIRECTOR CASHION: Yes. We've been in close contact with their head of sustainability and ESG. They do have a robust ESG policy and procedures. But in some instances, even if something is on paper, it doesn't mean it gets translated to a portfolio company at that level, and if there's going to be behavior that's unacceptable.

But we -- you know, they've assured us at the senior level of management that they've undertaken a review of all their at-risk portfolio companies for this type of transgression. And as Anton said, they've taken it incredibly seriously and I believe are taking appropriate actions in response in this -- their 13 point plan. So, you know, we will continue to work with them or speak to them about their ESG policies, procedures. Yeah, I think it's a good example and lesson as to you can always do better, and even if something is on paper, it needs to translate into actions across the board.

COMMITTEE MEMBER PACHECO: Thank you very much.

CHAIRPERSON MILLER: Okay. Director Rubalcava.

COMMITTEE MEMBER RUBALCAVA: Thank you, Mr. Chair. Very good presentation. I think this kind of review is very helpful to the Board. And I have two questions.

The first one I'm changing it because it's been brought up already by some colleagues here. So I -- I'm pleased that there's an ESG framework being used. And you went into some examples and lessons learned. So I'm pleased that CalPERS is using its opportunity to bring people in. That was good. I did not know that and that's good that there's been commitments and assertions from -- that they will be constructive with -- engage with labor and follow their governing rules, I guess, and laws.

So my question is looking at other tools, I mean, we -- Mr. Pacheco spoke about the principles and how to use that. I had another question. I saw an article that one thing that -- about CalPERS that we use these customized side letters in private equity. And I was wondering -- I was trying to look up the article, but I guess I exhausted my free article limit, so --

(Laughter).

COMMITTEE MEMBER RUBALCAVA: -- I couldn't read it. But is this side letter a way that we can also reinforce the ESG framework with our private equity partners?

MANAGING INVESTMENT DIRECTOR ORLICH: It is. And they're a very common feature of each and every private equity investment. The terms, you know, do vary from manager to manager on a whole host of issues, ESG, non-ESG, but we're, you know, working to have the limited partnership agreements and side letters reflect the latest in ESG understanding's best practices and governance.

COMMITTEE MEMBER RUBALCAVA: Great. That's good to know.

My second question, I appreciate -- I think it was very timely that this presentation happened, because you point out that one of the -- one of the new priorities is to move -- start moving away from buyout and going to venture, because that's been better performance.

And you speak to it in various points and this key initiative here and there, and all that. So my question is how do you expect to build up on it? One of the articles -- I saw three articles last week on this topic. One of the articles quoted - I think it was you, quoted you saying we're trying to reach to five billion. And right now we're less than one percent. I mean, it's not even one billion. So how are we going to get to five from one -- less than one to five really and what is the time frame? Thank you.

MANAGING INVESTMENT DIRECTOR ORLICH: The five billion is essentially to make the math straightforward, you know, roughly 10 percent of our 13 percent private equity portfolio translating to about one percent -- one percent of approximately, you know, $450 billion is how you get to the five billion.

But because of the nature of drawdown structures and how one invests in private equity, you should expect to see that number over approximately five years. So the money will go into the ground after we do our extensive work on manager selection, you know, diligence, negotiations, and ultimately making a commitment with a firm.

Now, I do want to underscore the dynamics of venture are characterized by this concept of performance persistence. And so the firms that will do well in the future have done well in the past, those firms are known to the market. And even though venture -- and in some cases it's characterized as its own asset class, in some cases it's grouped as a section of private equity, while venture has the highest overall returns, it's got the highest return dispersion. Another way to put that is the returns of venture are concentrated on the highest quartile.

And since those firms are known and they attain their performance by being disciplined in their fund size, they tend to be highly oversubscribed. And to a large extent, it's an exercise in access more than it is in manager selection. And that's why we need to be patient to make sure that we are only partnering with top firms.

COMMITTEE MEMBER RUBALCAVA: And that's speaks to something you said earlier about building those relationships. Again you said being patient, but building those relationship so they -- so when those -- there's an opening, we -- you can take advantage.

MANAGING INVESTMENT DIRECTOR ORLICH: That's right.

COMMITTEE MEMBER RUBALCAVA: Thank you very much.

MANAGING INVESTMENT DIRECTOR ORLICH: And just the one point I would add to that, part of that is partnering with firms that have been through multiple cycles, where, you know, ideally in most cases, we're talking about firms that have, you know, 20-year plus histories.

COMMITTEE MEMBER RUBALCAVA: Thank you. Thank you, Mr. Chair.

CHAIRPERSON MILLER: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: The only additional thing I'd add to the VC strategy is we're trying to be very thoughtful, because it is small in the overall grand scheme. And so the needle-moving aspect that I referred to earlier when we think about putting dollars to work, it has to be needle moving. In the case of venture, it's as much about aligning ourselves with these persistent top-performing partners, who also happen to be in thematics in parts of the market where they are investing in disruptive technology that we want to bring those -- that know-how in-house. And so we can really use our venture program as a -- kind of a double -- a double whammy, if you will, where we're focused and disciplined on who we're partnering with, but we can also really benefit from getting an edge on where the disruptive technologies are going and bring that knowledge and insights in-house, and apply that knowledge and insight across our other asset classes.

So we're being very thoughtful in how we deploy that capital within CV and it will be measured. And it will be methodical. And just to clarify it's not at the cost of our buyout program. When we talk about our buyout -- the large buyout program, that's more about rightsizing between large buyout and mid-market. We see outsized returns, for example, over the years in mid-market firms, sector-focused firms, et cetera. And so it's not that we're taking a dollar from buyout and putting it into venture, so I just wanted to clarify that as well.

COMMITTEE MEMBER RUBALCAVA: Thank you.

CHAIRPERSON MILLER: Okay. Director Ortega.

COMMITTEE MEMBER ORTEGA: Yeah. Thank you. I have a question about performance. And so it's sort of off topic from -- this is kind of a broad question about measuring performance of the private equity portfolio. So I think for me as a Board member, a challenging thing is not knowing until, you know, we have that look-back presentation about what the loss is for that decade of loss. And so that's a thing that I find challenging about private equity is you're sort of always looking over a longer period of time about what the actual performance is.

And so looking at slide 9, for example, you have that 10-year period highlighted, but the 3-year period is underperforming as well. And so then maybe the answer to that is that it's still being dragged from prior commitments. But how do we better assess in more real-time that the performance is what we expect, so that we don't wait until 10 years have gone by and we've not met our targets? And I think compounding it is the -- there's a custom benchmark. And so there's sort of when you're looking at each year of performance, we're not necessarily sure that we know what's happening and what our long-term -- or the next 10 years might look. So just some thoughts about how we as Board members can feel informed and comfortable with the performance as we're looking at it annually.

Thank you.

MANAGING INVESTMENT DIRECTOR ORLICH: To underscore a point from the presentation, even during this period of underperformance discussed on slide 9, throughout the same periods, there was outperformance versus a public equity market. Even with a premium put on public equity performance, there was still outperformance. And so you can have confidence that it's adding value for the equity risk that we take, and that is a real positive in discussing the history of the program.

But you're putting emphasis on a key point, which is one of the disadvantages of the asset class is the lagged reporting and the time that it takes to generate returns. This is a long-lived asset class. The investment period is somewhere between three and five years. A fund life which is the investment period plus the harvesting period is 10 to 12 years, so it does take time in changing a portfolio. Even with a modest amount of inexposure, and growth, and innovation, it takes time to translate into the portfolio and then to realize the returns.

So there are aspects, however, that we can look to in more real-time. And on that point, I would really underscore the co-investment component. So it -- because the returns of co-investment are a function of no management fees and no carry, we can mathematically say each five percent of commitments we make in co-investment as opposed to funds translates into 25 basis points of guaranteed alpha.

So roughly speaking, a co-investment relative to a fund structure has a four to six percent performance tailwind. And as we grow, the proportion of the portfolio -- and right now, we're at a run rate of 50 percent of co-investments. That's a very high level, but our target is to be at least 40. We can say that roughly speaking we're reducing our costs by 40 percent and that translates directly into net return. And that's a statistic that you essentially can get in real-time. So we can, you know, come to you today and say over the last two quarters, we've done $4 billion of co-investment and we know that that will generate essentially a reduction in the gross-to-net spread improving net returns. And we are hoping that our manager selection is on top of the reduction in the costs.

COMMITTEE MEMBER ORTEGA: Can I just ask a follow-up. So what you've described right there, will that be in a report that we would see then, that kind of quantifying what the value-add is over time?

MANAGING INVESTMENT DIRECTOR ORLICH: (Nods head). Yes.

COMMITTEE MEMBER ORTEGA: Okay.

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: Yes. And I just also add that the underperformance over the last three years is partly the underweight to venture, which is -- which has performed very strongly, but that's reversed over the more recent period.

COMMITTEE MEMBER ORTEGA: Thank you.

CHAIRPERSON MILLER: Okay. Controller Cohen.

COMMITTEE MEMBER COHEN: Yes. Finally.

(Laughter).

COMMITTEE MEMBER COHEN: I'm going to have to get in the queue faster, like as soon as the presentations start, just jump in the queue, because --

VICE CHAIRPERSON TAYLOR: There you go.

CHAIRPERSON MILLER: I think that that's --

COMMITTEE MEMBER COHEN: -- oh, my God.

CHAIRPERSON MILLER: -- what Jose Luis does every time.

(Laughter).

COMMITTEE MEMBER COHEN: Okay. You guys are awake. You're up there. How are you?

Just like everyone else has said, great presentation, blah, blah, blah. Listen, I've got five questions, okay.

(Laughter).

COMMITTEE MEMBER COHEN: And it starts -- the first one starts on slide 11. And it's going to go slide 11, 12, 16, 17, and 18. Okay.

So on slide 11, it notes that the State Street private equity benchmark is at 14 percent venture and also while CalPERS has been underweight in -- at less than 0.5 percent venture. And I wanted to know what do you think -- what do you think is a prudent pathway forward? Short, slice -- concise answers. I don't want anything long, just --

MANAGING INVESTMENT DIRECTOR ORLICH: Actually, I'm really appreciative you're breaking up the questions.

COMMITTEE MEMBER COHEN: Okay.

MANAGING INVESTMENT DIRECTOR ORLICH: So I'll return the favor by keeping it short. The 14 percent is something that, given CalPERS size, is unrealistic.

COMMITTEE MEMBER COHEN: Okay.

MANAGING INVESTMENT DIRECTOR ORLICH: And there are -- you know, just to emphasize a couple points from a prior answer. It's the first quartile of venture that's driving the return of the entire asset class. Those fund sizes are small. And given our absolute dollar amount requirements to get to 14 percent, we would essentially warp the opportunity set and not be with the best managers in the space. And that's the reason for the modest 10 percent of the portfolio in venture target, which will take years to achieve.

COMMITTEE MEMBER COHEN: Okay. Anyone else want to opine on that answer?

No. Okay. Good.

We're moving on. Slide 12. Okay. So slide 12 notes that quote rightsizing co-investments share a total commitment that would help lower costs and boost returns. I was wondering if you could give me some examples of an optimal split between the co-investment and funds. And this was again referencing slide 12.

MANAGING INVESTMENT DIRECTOR ORLICH: Yeah. This is a well documented area. There's an organization called CEM, which benchmarks institutional investors. I can tell you that based on a comprehensive study, they determined that the various -- the highest performing proportion of co-investment for anyone in its status set was 49 percent, and currently we are at 50 percent. That's the run rate for the last two quarters.

COMMITTEE MEMBER COHEN: Okay. So that's the optimal split you're...

MANAGING INVESTMENT DIRECTOR ORLICH: At a certain point, you can't completely eliminate. The fee and carry savings component is always there for you. There are no diminishing returns to that, but you have to have investments in funds in order to do co-investment. Co-investment is essentially a set of opportunities that the fund cannot take advantage of, so there is a minimum requirement of fund investing in order to generate the co-investment opportunities. And 50 percent is basically the natural limit where you start to essentially cut into the sourcing of the investments in the first place.

COMMITTEE MEMBER COHEN: Okay. We're on -- you're doing good. Doing very well.

Next question. Oh, so CalPERS has invested with emerging managers for a long time through a fund of fund for a while. And I'm curious to know what makes the $1 billion commitment to support emerging and diverse managers that's partnering with TPG Next and Grosvenor elevate different, and this is just referencing slide 16. The $1 billion commitment, what are we doing different?

CHIEF INVESTMENT OFFICER MUSICCO: I'll take that one. Manager selection is so instrumental in achieving returns and choosing a manager that's emerging has a few things implied. They likely don't have a traditional track record. You have to kind of pull that together differently. They may not even have a traditional background. Maybe they've done incredible things and -- within a corporate structure and now are deciding I've got this knowledge, and know-how, and access to interesting deal flow, and so I'm going to spin myself out. For us to -- for us to resource that appropriately where we can say hand on heart we do that as well, that diligencing exercise as well as we do that for buyout, middle market, et cetera, would just not be a fair statement.

So we're leveraging the expertise of these two groups, Grosvenor in particular who have had -- their entire organization is based on finding emerging managers. And so we're going to leverage that best in class and have that knowledge transfer. And there's a great example we're super hand in glove with them. We're learning their playbook, so that we can apply that playbook over time on our own. And a group like TPG, in addition to having the diligence capabilities also have real sector expertise. And again, we're going to lean on and better understand how to diligence certain sectors in a way that we don't have capabilities of in-house today.

COMMITTEE MEMBER COHEN: Okay. So TPG and Grosvenor those are -- those are the top two performing firms that you admire?

CHIEF INVESTMENT OFFICER MUSICCO: Those are the two organizations that we assessed were the most well rounded and get -- would get us to where we want to get to within the period of time that we wanted to get to, and would be able to lean on the relationship that existed already, because we've been long-standing investment partners with them. We can ask for a lot more. We're not just showing up for the first time saying you scratch my back, I'll scratch yours. We're saying to them let's go build this together, because we're aligned in the mission we're trying to achieve. We'll benefit from you teaching us. You'll benefit from us putting this program in place. And so we thought all around many, many things go into these decisions, but all told, great balance with those two partners and we're really excited about that.

COMMITTEE MEMBER COHEN: These two partners that we have, do they have similar relationships with other institutions?

CHIEF INVESTMENT OFFICER MUSICCO: Similar to one another.

COMMITTEE MEMBER COHEN: So you said that there are -- they are our partners. They work -- they've done great work in the Emerging Managers Program, and we are partnering with them to help build our program, is that correct?

CHIEF INVESTMENT OFFICER MUSICCO: Grosvenor done a great job in emerging managers. TPG has been very good at starting up new businesses --

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: -- within sectors that they have great expertise of assessing that they're backing the right entrepreneurs. So one has more of a they chase -- they choose great -- they have a nose for finding great investment within certain sectors. The other has a long-standing track record, 30 something years, of investing in emerging managers. So combined, we're getting kind of a bunch of tools in the toolkit. We're not just getting access to great emerging managers. We're also getting access to great emerging entrepreneurs within --

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- with certain expertise. One is more of a seeding program. The other one is more of a invest alongside or in certain strategies.

COMMITTEE MEMBER COHEN: Thank you for that simplified explanation. And that actually -- so the next portion of the question is is do -- are there other plans, such as like ours, doing similar -- has -- that has a similar strategy with --

CHIEF INVESTMENT OFFICER MUSICCO: This has frankly been our call to action in the marketplace to say, hey, if we can figure this out at CalPERS and mobilize our capital in a short period of time by creating this mouse trap, we all know that other organizations like ours have similar barriers. It's very resource insensitive. Like venture, checks tend to be very tiny. They don't so call move the needle, so everyone is facing these same problems, which is why the capital has not mobilized behind this important initiative. And so what we've said is we've set up the mouse trap. We invite you to join us. There are a few examples around the globe, very few, on one hand, who have created dedicated, in the hundreds of millions in most cases --

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- programs to target investing in diversity. But we have created this platform and invited others, which is why we're hosting the Catalyst event next week, where we have those other allocators coming in the room, we have the actual emerging managers and emerging entrepreneurs coming in the room and we're going to marry the two pools together so we can try to get this flywheel going. And our hope, and we've been very public and open about this, is that others jump on board with us, because the mouse trap is there.

COMMITTEE MEMBER COHEN: So I just want to make sure. So where we are going in this relationship is uncharted territory. There are no -- you're a yes -- you're not a yes/no type of person when I ask a question. You're like yes and -- or there's a long explanation. I'm just trying to understand. So what I -- based on that answer you gave me, it sounds like no. There aren't any other plans that are out there that have this type of relationship with these two businesses to help with their investment strategy. So what we are doing is creating something -- a new model.

CHIEF INVESTMENT OFFICER MUSICCO: New-ish.

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: New-ish.

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: That's why it's not a yes/no answer.

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: There are other organizations who have absolutely dedicated capital to invest in much smaller magnitude, emerging managers, but no one has said this isn't just about the managers. We're also creating a mentoring program. We're also --

COMMITTEE MEMBER COHEN: That's the part I'm asking for.

CHIEF INVESTMENT OFFICER MUSICCO: Yeah. We're also creating, you know, a playbook.

COMMITTEE MEMBER COHEN: Yes.

CHIEF INVESTMENT OFFICER MUSICCO: We're literally putting together the tools, so that these emerging managers have access to best in place in a literal playbook where we'll work with them to be better at what they're doing and we couldn't do that without the help of Grosvenor and TPG, so it's unique in that regard.

COMMITTEE MEMBER COHEN: So perhaps I should have asked a question. Emerging manager programs have been around. We've taken --

CHIEF INVESTMENT OFFICER MUSICCO: For a very long time.

COMMITTEE MEMBER COHEN: For a very long time with marginal success.

CHIEF INVESTMENT OFFICER MUSICCO: At best.

COMMITTEE MEMBER COHEN: Okay. We are in agreement. So really my question is is what are we doing differently that's going to -- that it's going to yield some success? And what I'm hearing is is that, well, we've learned from the mistakes in the past and we've partnered with these two TPG and Grosvenor about -- who are industry experts in different respects, but yet complementary areas.

CHIEF INVESTMENT OFFICER MUSICCO: Yes.

COMMITTEE MEMBER COHEN: And that kind of distinguishes our efforts from past efforts and --

CHIEF INVESTMENT OFFICER MUSICCO: It distinguishes our efforts from past CalPERS' efforts.

COMMITTEE MEMBER COHEN: Perfect.

CHIEF INVESTMENT OFFICER MUSICCO: And that alone, that's what we're focused on.

COMMITTEE MEMBER COHEN: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: Whether others would like to join us, we'd be delighted. Other groups have different skills in house to execute on these --

COMMITTEE MEMBER COHEN: Um-hmm.

CHIEF INVESTMENT OFFICER MUSICCO: -- but face similar barriers that I referred to. So even if they have all the skill, similar to a Grosvenor, the programs haven't really taken off, because they're such a drain on resources is the excuse that we hear. And so we're trying to eliminate all these barriers by saying here's the mouse trap, come join us. We know what we -- we know what our own capabilities are. We're humble enough to say we need help, and so we've kind of set this program up and said we need it to do a bunch of other things than just invest some money. We want the playbook, we want the mentoring bit. We want to bring diverse capabilities up through the whole industry, let alone just within the emerging managers that we're investing in.

COMMITTEE MEMBER COHEN: Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: You're welcome.

COMMITTEE MEMBER COHEN: Thank you very much.

All right, back to slide 17. So how much progress has the ESG Data Convergence Initiative made to standardize ESG metrics? That's the first part. And the second part is has there been any wide-scale adoption by private equity funds? Again, this referencing slide 17.

MANAGING INVESTMENT DIRECTOR ORLICH: I would cite the statistics on the left-hand portion of the page.

COMMITTEE MEMBER COHEN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: So the 300 figure is an achieved figure that combines general partners and limited partners. And then combined across those institutions, we're speaking approximately about $26 trillion in capital. And then the key metric I think I would focus on is the portfolio companies. So two --

COMMITTEE MEMBER COHEN: I'm sorry, what kind of companies?

MANAGING INVESTMENT DIRECTOR ORLICH: The portfolio companies.

COMMITTEE MEMBER COHEN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: So the companies that are essentially held in the private equity funds --

COMMITTEE MEMBER COHEN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: That's the tip of the spear as it were --

COMMITTEE MEMBER COHAN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: -- in terms of economic activity, carbon emissions, et cetera. So we're -- we've crossed the 2000 portfolio company threshold.

COMMITTEE MEMBER COHEN: What about, has there been any wide-scale adoption by private equity -- equity funds?

MANAGING INVESTMENT DIRECTOR ORLICH: Yes, so that's in that 300 figure --

COMMITTEE MEMBER COHEN: Got it.

MANAGING INVESTMENT DIRECTOR ORLICH: -- that combines general partners and limited partners, and has --

COMMITTEE MEMBER COHEN: All right.

MANAGING INVESTMENT DIRECTOR ORLICH: -- you know, a good number of private equity firms.

COMMITTEE MEMBER COHEN: All right, you guys have done well. Last question. This is referencing slide 18.

I was wondering if you could perform -- provide a short overview of the Ownership Works Program and CalPERS' role in that?

MANAGING INVESTMENT DIRECTOR ORLICH: So I would describe CalPERS as a limited partner driver of the program.

COMMITTEE MEMBER COHEN: Okay.

MANAGING INVESTMENT DIRECTOR ORLICH: I do think that Ownership Works is in the earlier stages, but we do serve on the council. We have a full-time member of the private equity team as a founding council member. And this is what I would describe as in the ramp phase and trying to incorporate more firms. Some of the firms that join it will already be doing something along the lines of employee ownership.

COMMITTEE MEMBER COHEN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: And this allows them to do it in a framework where they get more credit for it as it were, but there's quite a bit of new adoption --

COMMITTEE MEMBER COHEN: Um-hmm.

MANAGING INVESTMENT DIRECTOR ORLICH: -- and expansion of the principle of employee ownership. And we're, you know, at the cutting edge in achieving that.

COMMITTEE MEMBER COHEN: Okay. Thank you. Great job. Thank you, team.

Back to, Mr. Chairman.

CHAIRPERSON MILLER: Okay. Thank you, Madam Controller.

Next, we have President Taylor.

VICE CHAIRPERSON TAYLOR: Thank you, Chair Miller. A woman after my own heart. Okay. So I'm going to get down to brass tacks. I will send you the website for Ownership Works.

COMMITTEE MEMBER COHEN: Thank you.

VICE CHAIRPERSON TAYLOR: You're welcome.

So two things. One, Anton, so we sort of talked around the issue about accepting the AIC into our principles. And you kind of talked like you were saying that you're looking at all kinds of different things and you have an outside vendor helping you sift through the information, so that you can come up with some sort of responsible investing principles, is that what I was hearing?

MANAGING INVESTMENT DIRECTOR ORLICH: So this is a project that Peter is spearheading, so I'll give it to him.

VICE CHAIRPERSON TAYLOR: Okay. Thank you, Peter.

MANAGING INVESTMENT DIRECTOR CASHION: So CalPERS has already established ESG policies and procedures, so that's underway. We did look through the AIC guidelines as well, and it was an interesting or useful comparison. Many of those items were actually more relevant for general partners, because they were the ones directly investing in the companies. However, there are still requirements that we could make as a limited partner to have that general partner take on those activities.

VICE CHAIRPERSON TAYLOR: Why couldn't we require that -- well, yeah, I guess that's what we were saying, if we're going to get in the fund with a general partner, and I assume -- I mean, a ton of the general partners have already signed on to that, because it's their organization. So is that what you're -- so you would be checking to see if they've signed on to it.

MANAGING INVESTMENT DIRECTOR CASHION: Yes. Well, we're -- right. So I was just making the point that CalPERS isn't doing it directly, but via a general partner.

VICE CHAIRPERSON TAYLOR: So we wouldn't -- so what you're saying is, yes, we would do it, but it's via the general partner. We're not putting it in a formal RCP type thing, is that what you're saying?

MANAGING INVESTMENT DIRECTOR CASHION: No, not exactly. We would -- we would -- we still require a general partner to do -- to follow the ESG requirements. But my point was that CalPERS does not -- doesn't have a direct line with the individual portfolio company. We're relying on the general partner to do that.

VICE CHAIRPERSON TAYLOR: Okay.

MANAGING INVESTMENT DIRECTOR CASHION: Yeah.

VICE CHAIRPERSON TAYLOR: So -- and then -- so then what you're say -- also saying is that the -- you have ESG requirements that you're putting together right now or you already have?

MANAGING INVESTMENT DIRECTOR CASHION: So we -- there are existing ESG requirements. And for every investment, whether it's private equity or other asset classes, we present a questionnaire to each manager to assess where they are and --

VICE CHAIRPERSON TAYLOR: On the ESG requirements.

MANAGING INVESTMENT DIRECTOR CASHION: On ESG requirements.

VICE CHAIRPERSON TAYLOR: So that's even in private equity.

MANAGING INVESTMENT DIRECTOR CASHION: Correct, private equity and --

VICE CHAIRPERSON TAYLOR: So when we're getting ready to underwrite a deal, we send that questionnaire out.

MANAGING INVESTMENT DIRECTOR CASHION: Correct.

VICE CHAIRPERSON TAYLOR: Okay.

MANAGING INVESTMENT DIRECTOR CASHION: What we're -- the consultant that I referred to was -- over the next months, we will bring them on to review our current procedures and policies to check, confirm that they're in line with best practice, if there are any gaps. And as I said, it's a very quickly evolving field. We will update those with those -- with those new features.

VICE CHAIRPERSON TAYLOR: Can we get a copy of those?

MANAGING INVESTMENT DIRECTOR CASHION: Of the --

VICE CHAIRPERSON TAYLOR: The ESG proceed -- policies that you're following that -- with each investment.

MANAGING INVESTMENT DIRECTOR CASHION: Well, I mean, they're really covered in the governance and sustainability principles. And --

VICE CHAIRPERSON TAYLOR: So those are pretty broad. Those aren't really like prescriptive human capital, I don't think. I'd have to relook at them.

CHIEF INVESTMENT OFFICER MUSICCO: There's principles and then there's diligence questionnaires, kind of two separate things.

VICE CHAIRPERSON TAYLOR: Okay.

CHIEF INVESTMENT OFFICER MUSICCO: I think, in a nutshell, what Peter is saying is that CalPERS has long -- had a long-standing initiative in that front, well before any -- well before I arrived. What -- where were the opportunity sits right now is because there have been so many of these frameworks that have been created on the questionnaire as well as principles. We want to gather all of that, look across all the asset classes, and make sure that we are consistently using both questionnaires and principle -- having overarching principles that are best in place.

There are going to be some questions on a questionnaire that are relevant for private equity, different questions perhaps for the Real Estate Program, different questions perhaps that we work through on private debt for example.

So we're just making sure that we're being consistent and best in class.

VICE CHAIRPERSON TAYLOR: So you're saying yes, but what I need to know is are there principles for private equity?

CHIEF INVESTMENT OFFICER MUSICCO: Absolutely.

VICE CHAIRPERSON TAYLOR: Because we have RCP for real estate.

CHIEF INVESTMENT OFFICER MUSICCO: We have been --

VICE CHAIRPERSON TAYLOR: We have our proxy voting --

CHIEF INVESTMENT OFFICER MUSICCO: We have been following principles across all asset classes. What we haven't done is necessarily had the same principles or gut-checked that we're using best-in-class principles, because if you -- I think Peter rhymed off a number of organizations. You've got UNPR. You've for principles that ILPA puts out. You've got UN PRI. You've got a whole bunch of bodies that have put out principles. We want to make sure we're being consistent, are knowledgeable of all the principles, making sure we're asking and then the detailed questions.

VICE CHAIRPERSON TAYLOR: Are you talking to the Board too? Are you including the Board, because we have -- we also have some thoughts on this as well.

CHIEF INVESTMENT OFFICER MUSICCO: Absolutely. That's why we've hired Peter to come in. We're using outside counsel to work through -- outside consultants to work through it. And it's a body of work that we're sitting down with you on at the July off-site and we'll be rolling out the whole strategy in the fall. And so between now and then, tons of opportunity for Board education and feedback.

VICE CHAIRPERSON TAYLOR: Okay. So we will be able to see an overarching ESG principles for all -- for implementation into all portfolios, and then --

CHIEF INVESTMENT OFFICER MUSICCO: Into all asset classes.

VICE CHAIRPERSON TAYLOR: All asset classes.

CHIEF INVESTMENT OFFICER MUSICCO: As Peter said, we don't reach down into portfolio companies --

VICE CHAIRPERSON TAYLOR: I'm sorry about that.

CHIEF INVESTMENT OFFICER MUSICCO: -- but we can certainly speak to our GPs and say --

VICE CHAIRPERSON TAYLOR: That's fine.

CHIEF INVESTMENT OFFICER MUSICCO: -- our expectation if we invest in you.

VICE CHAIRPERSON TAYLOR: So when we do sign up with a new fund, then you are going to have an expectation of having some sort of questions.

CHIEF INVESTMENT OFFICER MUSICCO: We will go through a framework of questions and we'll make an assessment of whether or not we feel that they are following along with the principles that we deem are necessary for us to be investing partners with them.

VICE CHAIRPERSON TAYLOR: Okay. So -- and then my last thought is, Steven McCourt is here and Meketa has informed us that they are currently using some principles in their questionnaires with private equity. If you wouldn't mind giving us an update on that.

MR. McCOURT: Yeah. Thank you. Steve McCourt with Meketa Investment Group. The concept of labor principles has been a hot topic in the industry in recent years. To answer your question, Ms. Taylor, Meketa Investment Group has a set of labor principles that we require all general partners to acknowledge when they are completing due diligence questionnaires and soliciting capital from the clients for which we allocate capital to.

VICE CHAIRPERSON TAYLOR: Okay. And how -- are you getting pushback -- any pushback or anything like that?

MR. McCOURT: Not really. The area that's probably most challenging is the reporting requirements. Very little pushback on expected behavior from general partners. I think most of -- most everyone looks at labor abuses in all sorts of businesses and can agree that they should not exist. The biggest challenges relate more to requirements of general partners to complete questionnaires or complete regular information requests on a wide variety of detailed information on workforces across the portfolio companies that they -- that they oversee. Because if they agree to do that, as SEC regulated entities, they are then subject to regulatory risk with the SEC if they have a document that says they will do this, but they don't -- they do 99 percent of it and not a hundred percent of it. So some concern about the reporting requirements. Very little on the actual principles themselves.

VICE CHAIRPERSON TAYLOR: Okay. So reporting requirements, which I think Mr. Orlich had said that there was not follow-through, right? That's where we're running into issues. And I think Mark Carney said that too is there's not follow-through on these principles as we're moving forward in private equity, is that correct, Anton, that you have like questionnaires -- or you Nicole, that you guys have the questionnaires or have asked questions, but then it comes down to whether or not we can reach down and ask them later which is what Mr. McCourt is talking about.

MANAGING INVESTMENT DIRECTOR ORLICH: So I think our response rate from general partners in our ESG questions and our due diligence questionnaires is very high. I do think there's some self-selection there, because we are partly sourcing based on a firm's ability to execute well on ESG frameworks, but the response rate is robust.

And you can see it from the data convergence numbers, we're also getting traction on essentially the metrics. Although I do think that that is not as advanced as the DDQ responses, and that's due diligence questionnaire.

VICE CHAIRPERSON TAYLOR: Okay. Okay. I get it. All right. I think I'm going to stop there.

Go ahead.

CHAIRPERSON MILLER: Okay. Next, we have Director Walker.

COMMITTEE MEMBER WALKER: Hi. So this is kind of -- I'm just going to ask the question. So we -- I've been hearing a lot at the meetings I've been going to about private equity going into health care. Are we working with managers that are -- or whatever the right term is. Is CalPERS involved with private equity and health care a simple question, I think?

CHIEF INVESTMENT OFFICER MUSICCO: Yes.

COMMITTEE MEMBER WALKER: We are. Okay. And so what are -- and do we have principles around how we work with them or what we expect from them -- I don't know if I'm asking this right. As we go --

CHIEF INVESTMENT OFFICER MUSICCO: We don't -- we don't have sector-specific principles. What Peter is working through with the help of consultants is taking a look at the broad landscape of principles that are generated from multiple sources from multiple end groups. And we'll -- we're going to come back with a consolidate -- we haven't contemplated having bespoke principles by sector. Albeit, there are certain sectors that will require more consideration around certain things.

COMMITTEE MEMBER WALKER: Right.

CHIEF INVESTMENT OFFICER MUSICCO: That would be included in the broad base of questions like for diligence, which is different than overarching principles, which we're also working on. So just so that we're clear, there's principles and then there's very detailed due diligence questionnaires that help us get to the answer of whether or not we think they're being responsible investors at the end of the day.

COMMITTEE MEMBER WALKER: Okay. I'm looking forward to the off-site, because I think that we are intermingling terms.

CHIEF INVESTMENT OFFICER MUSICCO: I think so.

COMMITTEE MEMBER WALKER: And so we're not necess -- we're not talking the same thing back and forth. And I --

CHIEF INVESTMENT OFFICER MUSICCO: Yeah. And it's our pleasure --

COMMITTEE MEMBER WALKER: -- I think that's part of what I'm hearing.

CHIEF INVESTMENT OFFICER MUSICCO: Yeah, I think that's -- I think that's a great part about us agreeing that we're going to do a lot more Board education, because it will -- let's all level set and get -- use the same terms and the same terminology. Let us give you comfort where we've got things in place. Let us highlight and flag for you where we have fallen short in our own, you know, observations, and how we're leveraging outside expertise to make us be best in class for 20 -- for our journey towards our 2030 strategy.

COMMITTEE MEMBER WALKER: Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: You're welcome.

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: And if I could -- if I could just add, please. So I previously set up the UK -- the largest UK public pension plan, which is one of the leading sort of asset owners and responsible owners in the UK. So having joined --

COMMITTEE MEMBER WALKER: Excuse me, you've got to speak a little slower for me --

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: Sure.

COMMITTEE MEMBER WALKER: -- because I'm processing your accent at the same time --

(Laughter).

COMMITTEE MEMBER WALKER: -- you're talk and you're talking really fast.

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: Excuse me and also probably an accent as well.

COMMITTEE MEMBER WALKER: That's okay.

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: Okay. So previously having set up the largest UK public pension plan, which was also a leader in the sustainability and responsible ownership, I'm going to be working very closely with Peter, and with the asset class teams, and the external consultants to see how we can upgrade our ESG framework going forward. So CalPERS is well regarded in the market, but hopefully there are areas that we can upgrade. And when you look at particular sectors, parts of that ESG framework will be more applicable to certain sectors than others. So you'll focus on the sector framework -- you'll focus on the framework what's most relevant for the sector. So I think that's to come to the Board and we can ask discuss in the July off-site --

COMMITTEE MEMBER WALKER: Than you.

DEPUTY CHIEF INVESTMENT OFFICER BOOTH: -- and then work with you to make sure that we've got something that we're both comfortable with.

COMMITTEE MEMBER WALKER: Thank you.

CHAIRPERSON MILLER: Okay. Frank Ruffino.

ACTING COMMITTEE MEMBER RUFFINO: Yeah. Thank you. Thank you, Mr. Chair. I want to just follow up real quick on some of the -- on the question that President Taylor asked, because I'm a little confused. And so maybe I'm sure in July when we do the educational it will be helpful to understand. But the last Board meeting, I think we left it off that staff was going to work -- you know, a consultant was going to come up with this quote unquote principles or labor principles, right? But today -- what I'm hearing today now that we are working on drafting some principle with a new consultant as -- or some new consultant. I'm not sure. I didn't -- and then we heard from Meketa that they were working on some sort of principle as well. So I'm not sure if -- are these the same -- is this the same thing? Are there two distinct things and why are we --

CHIEF INVESTMENT OFFICER MUSICCO: I can't speak to what Meketa is doing, but what I can speak to, again I think there's -- we're talking over one another with -- understandably so. This is not -- this is a complex issue.

ACTING COMMITTEE MEMBER RUFFINO: Sure.

CHIEF INVESTMENT OFFICER MUSICCO: We're talking about ESG principles, the "E, the "S", and the "G". We're also talking about how you operationalize ESG principles using frameworks that in some cases, you know, have considerations for different sectors and different asset classes. In order to do both of those well, we're engaging an outside firm to help us look through what have we already got, what's best in class around the market for asset owners and managers, and how can we pull all this together, so that we stick a pin in what our overarching principles are, for "E", and "S", and "G", and how we then implement framework for diligencing our investment partners to make sure that they are doing their end of the system, if you will, to make sure we're all investing responsibly, sustainable investing, responsible investing, sustainability. Lots of terms all kind of leading to the same thing. I think where there's some confusion in your question is you're very -- you're speaking specific to labor principles.

ACTING COMMITTEE MEMBER RUFFINO: Correct.

CHIEF INVESTMENT OFFICER MUSICCO: We've brought it up one level and said we're looking at ESG principles across the board. There are certain pieces of labor principles that we've been able to execute on and in our real estate program where it is captive to us. We are the only investors. We can say to our partners, you shall not receive capital unless you do X. There's a different issue at hand for us making it next to impossible for us to replicate that, for example, that specific part of labor principles. There's lots of labor principles, but that specific one. There are some limitations in our ability to ever dream of doing that within the Private Equity Program, because we're not the sole investors. There's many, many, many, many, many LPs in there and we don't have direct ownership in the way that we do in some cases on real estate.

So that -- I think at our offsite in July, we're going to be able to treat it like a lab where we just get in the weeds together and kind of walk through all of this with everyone and get on the same page.

ACTING COMMITTEE MEMBER RUFFINO: Correct. So your last comment, it's -- thank you. That clarifies it a little bit. So labor principle is sort of like a subset of these. But your last comment said it, because it's so complex, right --

CHIEF INVESTMENT OFFICER MUSICCO: Yes.

ACTING COMMITTEE MEMBER RUFFINO: -- that we don't have it. But I thought our whole objective was to find a way to come up with some sort of labor principle for private equity, because we were missing those. And I understand, and I appreciate the complexity in what you just said, you know, that it -- we can't just adopt the ones for real estate. We -- but I thought that was the task -- if I'm not mistaken, that was the task that we addressed I think at the last Board meeting, and that's what we asked staff.

So now, the thing -- so the only thing now that's new is that we are engaging and outside consultant -- a new consultant, right? They're not consulting them right now.

CHIEF INVESTMENT OFFICER MUSICCO: Again, not to complicate things, I think we've always committed that we are going to be best in class with -- and make sure that we are clear and get your buy-in on our "E", and "S", and "G" principles. We hear and we acknowledge that within the "S" of the ESG, there's an absolute expectation of the Board that the "S" part, which specifically points to labor principles is included in our work. Our work can't just be on labor principles, because there's many other parts to the "S" like there is to the "E" and "G", so we're working to make sure that you get an all-encompassing program at the end of the day that will be very clear on our principles across ES&G, of which includes labor principles, but we'll also share with you to hold us accountable, that we're asking the right questions in diligence. We refer to those as our ESG frameworks. Those are the things we sit down with our potential invest -- investment partners and say are you doing XYZ? Help us understand where the risks are. Help us understand where the opportunities are.

We've always looked at this as a full package. We hear the Board loud and clear though that there's an acute interest in the "S" part that relates to labor principles and we're working on that too.

ACTING COMMITTEE MEMBER RUFFINO: Okay. Great. Thank you.

CHIEF INVESTMENT OFFICER MUSICCO: You're welcome.

ACTING COMMITTEE MEMBER RUFFINO: I just want to renew the comment that I made last time, that the Treasurer is very interested in reviewing, and supporting, and contributing to those principles, because she's got some strong feelings and they know what are -- what they should be for a number of reasons.

CHIEF INVESTMENT OFFICER MUSICCO: Understood. Thank you.

ACTING COMMITTEE MEMBER RUFFINO: Thank you, Mr. Chair.

CHAIRPERSON MILLER: Okay. Back to President Taylor.

VICE CHAIRPERSON TAYLOR: Sure. Last thing. So we're -- I'm clarifying one more time. We have an outside consultant that you guys are working with to bring all of this together, so that we're not overlapping work. I get that part and I appreciate that. So I just -- and then I think I asked are we making sure to bring it to the Board and you said July. Have you talked to -- have you got the labor principles, right, which we got from a labor group? Have you talked to Meketa of what theirs are and then have you also looked at -- because the AIC principles are an overarching ESG principles. So I just want to make sure all of these things are sort of taken into account that get brought back into light.

CHIEF INVESTMENT OFFICER MUSICCO: I can assure you we are doing an extremely thorough look and deep dive, including talking to folks like Meketa, and any and other of the groups. We've asked -- we are working with an outside party, an outside consultant to precisely make sure we turn every rock, to make sure we bring back a fulsome, well researched, well documented proposal for our "E", and "S", and "G" principles. We're aware of work now that Meketa is doing. We'll ensure to circle back with Meketa. We'll be circling back and making sure that we've taken into consideration all the great work that other groups have done and come forward with principles that we think are appropriate for what we're trying to accomplish.

VICE CHAIRPERSON TAYLOR: All right. I appreciate it, Nicole and I do not mean to bash this subject over your head. It also kind of goes for real assets, because I think we asked for an update on that. And I know we're going to address that later. I just wanted to throw that out there and then I don't have to say anything later. Okay.

CHAIRPERSON MILLER: Okay. Well, I think everybody has asked all these questions that I was prepared to, you know, to go into, so I won't belabor any of it or ask any more at this time. I will say I'm really excited about, you know, the coming weeks and to hear all -- more about all this in July. Glad I come to these meetings. I learn so much.

So good luck to the team and all your diligent work. And to the consultant who's working on this, I'm sure that there will be plenty of folks for them to talk to between now and then. And, you know -- and for me, I think Nicole's point about us all getting kind of on the same page, even just in terms of the intent, and the lexicon, and other -- you know, I looked at a lot of these documents and there's principles, there's guidelines, there's overarching ideas, there's -- you know, the AIC has guidelines, and so-and-so has principles, and these overarching things. And they're all over the place. And I think bringing it down to what are we really talking about, what are the -- these principles that motivate us to find something to put in questionnaires to give people an idea of what we're looking at when we assess them versus what are we actually going to say we're going to hold you accountable to this in terms of, you know, proactive behaviors, actions, commitments that will or will not determine whether we engage in or continue in a relationship with you.

I think that needs to all be, you know, really clear when the dust settles to the point where I would be really happy if we, as leaders, you know, when we conclude this can say here's the shiny object. Let's take it to ILPA. Let's show them. Let's hold it up for the world and say, hey, here's another place where maybe, you know, what we've done will help the rest of our, you know, worldwide community who has an interest in some of the things that we value as well in this year.

So thanks, everybody. Thank you all, my colleagues here, for your engaging questions and everything and we just really look forward to hearing back in July.

So moving right along. Any more questions? Anybody else to speak?

I have some public comment on this item. And I have some folks in the room. And I think we may have some on the phone. So without further ado, I'll call for

Valencia[SIC] Alvarez. And I believe we'll have a translator, so you'll have six minutes. And the clock will start whenever you introduce yourself and begin to speak.

VALERIA ALVAREZ(through interpreter): Good afternoon. My name is Valeria Alvarez. I came a long way today to tell you what it's like to work for an Apollo-owned company, because I think it is important who invests your money. At Cardenas market, I sought for sexual harassment in two stores. In the first store, I was harassed by my co-worker and a manager in a different department, and I reported it to the store manager and to human resources.

When nothing was done to change it, I quit because it made me uncomfortable to go to work. When I left, I told the store manager that she made me feel like the harassment was my fault. Then I got hired in another Cardenas store in Fontana. I thought working there would be better, but the store manager there started sexually harassing me. He asked me to be his girlfriend, to go away with him to Las Vegas, and he started touching me.

I filed a complaint with Cardenas at the end of December 2022 and so did another woman who works there. Cardenas replaced the store manager with a new manager, the woman who run the tore I quit from. She began retaliating against me, including touching me inappropriately. In March 2023, I filed a complaint with the California Civil Rights Department alleging sexual harassment and retaliation against me for reporting sexual harassment to Cardenas.

In April, I was terminated. I shouldn't have to feel like that at work. I shouldn't be fired for reporting sexual harassment. Cardenas Market treated me with disrespect and Apollo is responsible for Cardenas markets. I ask you to hold Apollo responsible.

CHAIRPERSON MILLER: Thank you.

Next, we have Jared Gaby-Beigel.

JARED GABY-BEIGEL: Good afternoon, Chair and Board members. My name is Jared Gaby-Beigel and I work for the Food -- United Food and Commercial Workers International Union. I'm here to speak about Cardenas markets, a California grocery chain owned by Apollo Fund IX fund, a fund that CalPERS has committed $550 million towards. As an investor in Apollo Fund IX, and as Apollo seeks your commitment to its new fund X, we urge you to step up your review of Cardenas's labor record, which we believe raises fiduciary concerns, sustainability issues, and the prospect of a growing labor dispute.

As we have said before, we commend CalPERS inclusion of fair labor practices in your Investment

Beliefs and governance and sustainability principles of human capital management. Your policies state that invested companies should adopt maximum progressive practices that emphasize and focus on preventing discrimination, harassment of any kind, and respect our employees' voluntary freedom of association.

Your review this afternoon of the private equity program highlights your leadership role in ESG investing and recommends you continue to prioritize ESG initiatives. Consistent with that recommendation, we ask you to hold Apollo accountable to your investment policies in a home state portfolio company, Cardenas Markets.

Since we were last here in January, labor issue at Cardenas have worsened. In March 2023, two women who worked for Cardenas filed complaints again the company with the California Civil Rights Department alleging sexual harassment and retaliation for reporting sexual harassment To Cardenas. You just heard from one of them, Valeria Alvarez who was fired in April after filing that complaint.

You'll recall that another employee, Rosalvo Martinez told you in January that a store manager asked her to take a drug test and a pregnancy test when she was ill at work, and she was subsequently terminated.

Earlier this month, Apollo's co-head of Impact

Investing, Joanna Reiss, who is Apollo's ESG executive told another limited partner in Fund IX that these two stories are simply not true. Ms. Reiss said the two women who've spoken to you are not telling the truth just minutes before Apollo competed for more tan $300 million in a new commitment from that public pension fund, again not true.

If Apollo was doing it's job for you, it would ensure that all its workers in your portfolio companies had a strong voice to change unacceptable conditions at work, and Apollo would believe them and do all the work necessary to uphold your investment principles. As your staff elaborated this afternoon, ESG investing is predicated on credible data for you to assess the impact of your investments. There's risk of -- there's risk in getting all of your information from investment managers who seek your dollars.

Apollo owes you action -- owes you action to bring Cardenas in line with your investment policies before CalPERS commits additional funds to Apollo's management. Apollo should see that Cardenas rehire Ms. Martinez and Ms. Alvarez and stop any retaliation against workers who speak up.

I'll also say that I have written verbatim the testimony that Joanna Reiss gave to the Teachers'

Retirement System of Louisiana earlier this month and I'd be happy to share copies with any members of the Board or staff who are interested.

Thank you.

CHAIRPERSON MILLER: Thank you.

I don't believe we have any more public commenters in the room, but we do have, I believe, someone on the phone. Mr. Teykaerts.

STAKEHOLDER RELATIONS ASSISTANT DIVISION CHIEF TEYKAERTS: Yes, Chair Miller, we do have one public commenter on -- Valentina, go ahead.

VALENTINA DAVOS: Thanks a lot. Good afternoon. My name is Valentina Davos with the Private Equity Stakeholder Project. I'll be updating the Board on Blackstone-owned Slaughter House Cleaning Company Packers Sanitation. I was glad to hear the concerns discussed by the Board earlier in the meeting. As you'd like to know, CalPERS has invested more than $4 billion with Blackstone private equity funds.

In November 2022, the U.S. Department of Labor sought an injunction against Blackstone on Packers to stop the company from illegally employing dozens of children in hazardous occupations (inaudible) in conditions of oppressive child labor. Packers settled the charges and paid a one and a half million dollar fine in February.

The deal noted that these findings represent a systemic failure across Packers entire organization to ensure that children were not working in violation of the law. These children were cleaning meat processing equipment, including back saws, brisket saws, and head splitters. Investigators learned at least three minors suffered injuries, including caustic chemical burns while working for Packers.

The Department of Labor ultimately found that Packers Sanitation employed at least 102 children in hazardous occupations, and had them working overnight shifts at 13 slaughterhouses in eight states.

Blackstone has owned Packers Sanitation since 2018. Several Blackstone executives serve or recently served on the Packers Sanitation board. This oversight from Blackstone has been costly. In addition to the one and a half million dollars in fines that Packers Sanitation paid, Bloomberg reported in March that the company's valuation had been marked down meaningfully since last fall. In April, after some Packers customers announced they were cutting ties with the cleaning company, the price of Packers debt tumbled to 51.6 cents on the dollar, a level that typically indicates a company is contending with deep distress.

Blackstone has continued to face scrutiny from some of its largest investors including New York State Comptroller's Tom DiNapoli, trustee of the $240 billion New York State Common Retirement Fund and North Carolina State Treasurer Dale Folwell.

CalPERS should halt new investments with Blackstone until the firm adopts and implements a comprehensive policy to address labor compliance and human capital risk across the portfolio. The comments you're hearing today underscore labor risks in CalPERS private equity portfolio. We urge CalPERS to take further steps to ensure its external managers are accountable for their impacts on their communities and workers.

Thank you.

CHAIRPERSON MILLER: Thank you. I don't believe there are any more public comments. I have a few questions, comments from the Board starting with Controller Cohen.

Oh, Madam Controller, you have the floor.

COMMITTEE MEMBER COHEN: I shouldn't. I know I said I wanted to get in the queue earlier, but --

CHAIRPERSON MILLER: You beat Jose Luis this time around.

COMMITTEE MEMBER COHEN: It's so early that I don't even have a question formulated just yet.

CHAIRPERSON MILLER: Okay. Jose Luis. Go ahead, Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you. Thank you, Chair Miller. You know, this comment from this woman and -- Latina woman speaking about this issue in this marketplace, it's really sad to hear this happening at this -- at this portfolio company owned by -- through the fund owned by Apollo. And, you know, these kind of practices shouldn't be happening, especially at these -- at these companies. And, you know, I think we -- you know, we need to be very clear that to our buyout firms that we -- that we have about 73 percent in our portfolio that this is not acceptable. This is not acceptable.

And I -- I don't know what else I can say as a Board member. I mean I'm just one of 13, but it's disheartening to hear this. So it's uncomfortable for me to say it, but it has to be said. So that's what I wanted to mention.

Thank you.

CHAIRPERSON MILLER: Okay. Thank you.

I have no more requests to speak on this item. So I thank you all, thank the team, and we'll move on to our next item, which is 6e, the real assets annual program review.

(Thereupon a slide presentation).

CHIEF INVESTMENT OFFICER MUSICCO: Great. Thank you. I'd ask Sarah Corr to join us up here. She'll walk us through the real assets annual program.

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MANAGING INVESTMENT DIRECTOR CORR: Good afternoon. Sarah Corr, CalPERS Investment Office. Upon reflection of the fiscal year 22-23, it was a year of challenge by economic uncertainty. There are numerous contributing factors, including recessionary fears, high inflation, interest rate spikes, stress on the banking system, and capital market dislocation. These factors have contributed to eroding fundamentals in certain segments of the real assets portfolio, while driving costs of capital adjustments put pressure on asset valuations.

We are mindful of the underlying risks and are fully engaged with our managers to help maintain strong fundamentals to preserve the portfolio and asset values. The annual review before you highlights our program overview, portfolio positioning, accomplishments, and ongoing initiatives.

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MANAGING INVESTMENT DIRECTOR CORR: The role of real assets, specifically providing predictable cash yield, drives us to a focus on core assets that offer resiliency through cycles. We are currently in the part of a cycle when our core focus and conservative capital structure should offer some protection in an environment filled with downside risks.

The real estate portfolio is concentrated in well located assets with defensive characteristics, while infrastructure portfolio is compromised of essential assets with predictable revenue models.

The portfolio is fairly concentrated with 27 partners, 17 of which are considered strategic. Consistent with the strategic plan, the team continues to focus on deploying capital at scale, while maintaining high underwriting standards to maintain -- to maintain the strategic asset allocation target.

The Board-adopted Investment Beliefs influence our approach to investing. We commit capital to partners in cost effective accounts with a long-term hold mandate.

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MANAGING INVESTMENT DIRECTOR CORR: Within the infrastructure portfolio, we have been building strategic relationships with highly reputable, market-leading managers and leveraging our built to co-invest to be more cost effective. Staff has effectively repositioned the real estate portfolio and it is now in a place where we can look to move up the risk curve and selectively increase exposure to value-add investments. Within the infrastructure portfolio, we look to invest capital in energy transition and sustainably certified assets to align with CalPERS net zero plan. Consistent with Investment Beliefs that cost matters, the real assets team is looking to -- at our current fee structures to make sure they are aligned with the scale of our separate accounts.

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MANAGING INVESTMENT DIRECTOR CORR: Increased interest rates have had an impact on valuations within the real assets portfolio. This is especially true for the office sector where there's widening differences in demand for Class A relative to Class B office. Increased debt costs coupled with economic uncertainty is also contributing to a material reduction in transaction volumes.

Marketwide, there's $1.4 trillion of commercial real estate debt that is maturing in the next two years. It is likely that not all of this will get refinanced and some investors will end up defaulting on loans and giving the keys back to the bank. This is particularly acute in the office sector with continued uncertainty around the potential structural changes in office demand impacting the ability to refinance the debt.

Higher inflation has benefited the infrastructure portfolio, as the companies have been able to pass on increased costs to their clients. Investor interest in private markets and increased competition for assets has led to excess -- to excess of $600 billion of unfunded commitments in real estate and infrastructure.

Economic and geopolitical uncertainty is causing investors to be more cautious in their underwriting. Investors are altering their portfolio construction and targeting essential assets, such as renewables, and long-term contracted assets in the infrastructure.

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MANAGING INVESTMENT DIRECTOR CORR: Throughout, this portfolio is currently 80 percent real estate and 20 percent infrastructure. The current strategic plan -- plan's increased focus on infrastructure will result in its weight increasing over time. Although the real assets portfolio has sought -- shown strong absolute returns, it continues to underperform the real assets policy benchmark. There is currently just under $14 billion of committed capital available for our partners to invest over time.

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MANAGING INVESTMENT DIRECTOR CORR: The portfolio is currently 90 percent core and this portion of the portfolio has met or exceeded the benchmark in the 5- and 10-year time periods. The value-add and opportunistic segments have underperformed in all time periods. However, most of this exposure is to legacy assets, which are dispositioned -- dispositioned candidates. This foundation in core allows us to evaluate new value-add an opportunistic strategies.

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MANAGING INVESTMENT DIRECTOR CORR: The real assets portfolio is now $70 billion of net asset value and has grown by approximately $12 billion dollars over the last year. The larger drivers of this growth were the acquisition of a portfolio of retail assets on the west coast in an infrastructure asset in the United Kingdom.

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MANAGING INVESTMENT DIRECTOR CORR: The portfolio has a modest amount of leverage and has ample cash flows to service the interest payments.

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MANAGING INVESTMENT DIRECTOR CORR: We'll now move to focus on the real estate portfolio.

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MANAGING INVESTMENT DIRECTOR CORR: The portfolio is well diversified by sector. While the performance has been strong on an absolute basis and exceeded the assumed rate of return in the strategic asset allocation, it has underperformed the policy benchmark.

However, when you look closer, the core portfolio, which makes up approximately 90 percent of the real estate portfolio, has performed well. The 10-year return has outperformed the benchmark by over 230 basis points.

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MANAGING INVESTMENT DIRECTOR CORR: The real estate portfolio has grown to be just over $59 billion in net asset value.

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MANAGING INVESTMENT DIRECTOR CORR: The portfolio is currently overweight retail and slightly underweight all of the sectors relative to the benchmark. Just a third of the real estate assets by value are located in California and six percent is international.

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MANAGING INVESTMENT DIRECTOR CORR: The next part of this presentation will cover the infrastructure portfolio.

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MANAGING INVESTMENT DIRECTOR CORR: The infrastructure portfolio is 85 percent core and has outperformed the benchmark in the 1-, 5-, and 10-year periods. As we commit to more commingled funds, the unfunded commitments currently sitting at just under $5 billion should be expected to grow.

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MANAGING INVESTMENT DIRECTOR CORR: The focus on growing the infrastructure portfolio is playing out. The portfolio has grown from approximately $5 billion in net asset value in 2019 to $12 billion in 2022.

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MANAGING INVESTMENT DIRECTOR CORR: These asset are largely located in the United States and transportation represents the largest sector. As we continue to invest in the asset class, you should expect that there will be -- that there is more exposure outside the United States as the portfolio grows.

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MANAGING INVESTMENT DIRECTOR CORR: The portfolio is comprised of high quality essential assets with modest leverage. This should serve to protect the well -- this should serve the program well providing greater stability and resilience in the near term, as downside risks prevail under current market conditions.

As mentioned earlier, we will look to continue to grow the infrastructure portfolio by expanding our infrastructure relationships, including strategic co-investment opportunities. We will continue to evaluate resources, including our technology needs. A big initiative for the program for this year will be to part -- to partner with sustainable investments to fully integrate SI into our decision-making and monitoring activities. With that, I'll closeout with a couple topics on sustainable investments.

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MANAGING INVESTMENT DIRECTOR CORR: There is continued broad participation from our managers in benchmarking sustainable practices through GRESB. As you may recall, I've given a more in-depth presentation on this at the March Committee meeting. We continue to evaluate emerging tools to better assess physical and transition risks associated with climate change across the portfolio. Where possible, we have incorporated ESG requirements into separate account contracts, which promote alignment of external managers.

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MANAGING INVESTMENT DIRECTOR CORR: As it relates to the Responsible Contractor Policy, as discussed in previous meetings, we will work with sustainable investments and other stakeholders to review the policy in the upcoming fiscal year. Any proposed changes would come back to this Committee for your review and approval.

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MANAGING INVESTMENT DIRECTOR CORR: Finally, as part of working with Peter and the sustainable investments team to further integrate SI into our processes, we will look to update the real assets strategic -- SI practices guidelines.

That concludes my prepared remarks and I'd be happy to take questions.

CHAIRPERSON MILLER: I'm not seeing any questions. I have no questions either, and thank you for the report, and appreciate all the encouraging work. And thanks to the whole team.

And oh, here we go. Okay. I do. It just must have been a delay in my screen here. The speed of light is a little bit slower at my station sometimes.

So, let's see, Controller Cohen.

COMMITTEE MEMBER COHEN: Oh, good. Thank you first. Okay. I'm from San Francisco and born and raised there. The city has got a lot of challenges, but I do want to talk a little bit about the re -- the real estate market. And the San Francisco real estate market has been in the news lately with the owners of Hotel Union Square, Park 55 Hotel, as well as the Westfield Mall saying that they're turning the properties back to their lenders. Needless to say, it's disrupted the local economy.

Office buildings continue to be sparsely occupied as well. I was just wondering if you are seeing this happen in other metropolitan areas that CalPERS is invested in.

MANAGING INVESTMENT DIRECTOR CORR: It's -- we're starting to see in many of the larger cities. LA and New York specifically come to mind in areas that are experiencing similar things that we do invest in -- in cities that we do invest in.

COMMITTEE MEMBER COHEN: So how do you see the trend in office and mall investments playing out over the next five years?

MANAGING INVESTMENT DIRECTOR CORR: Yeah. I would -- those are topics that I plan to cover in the closed session when we cover the go-forward strategy.

COMMITTEE MEMBER COHEN: Okay. And then I guess my final question is is how does CalPERS compare with other institutional investors in this particular asset class?

MANAGING INVESTMENT DIRECTOR CORR: I would say that CalPERS has a different approach to most other institutional investors in the asset class.

COMMITTEE MEMBER COHEN: Different in what way?

MANAGING INVESTMENT DIRECTOR CORR: In the real estate specifically, we invest in separate accounts where the managers are captive to CalPERFS for the strategy that they're investment on our behalf on. We do not invest --

for the most part, we do not invest in commingled funds within the real estate portfolio, and that is what differentiates us from most other institutional investors.

COMMITTEE MEMBER COHEN: Thank you.

Mr. Chair, back to you.

CHAIRPERSON MILLER: Okay. Thank you, Madam Controller.

Next, we have Director Willette.

COMMITTEE MEMBER WILLETTE: Oh, thank you so much. Hi. Good afternoon. I really appreciate the presentation and my colleagues for the questions. I just had a question. I know in November we had -- I recognize the Responsible Contractor Policy highlight year in the presentation. In November we had a presentation on it, but at that time, I believe we'd asked for an update to that RCP Policy. It's been over eight years, since we had updated it and I would like to know if staff has a timeline, a specific calendar timeline that we could expect to get our RCP Policy updated.

MANAGING INVESTMENT DIRECTOR CORR: Yeah. We committed to reviewing it over the next fiscal year with sustainable investments as well as stakeholders. And any changes that we would propose to that would come back to this Committee for review. So it will be in the next fiscal year.

COMMITTEE MEMBER WILLETTE: So from now until a year from now, we'll get an update? Any time between now and --

MANAGING INVESTMENT DIRECTOR CORR: It could come back before that, but we committed to doing it in the next fiscal year.

COMMITTEE MEMBER WILLETTE: Okay. So we'll look forward to that by June of 2024?

MANAGING INVESTMENT DIRECTOR CORR: (Nods head).

COMMITTEE MEMBER WILLETTE: Okay.

CHAIRPERSON MILLER: Okay. Is that it?

COMMITTEE MEMBER WILLETTE: Yeah.

CHAIRPERSON MILLER: Okay. Director Middleton.

COMMITTEE MEMBER MIDDLETON: Thank you.

And this may be more appropriate in closed session, but as you look at the changing housing market, is there any increased opportunities for us in residential housing?

MANAGING INVESTMENT DIRECTOR CORR: I'll defer to closed session where I'll be covering our housing strategy as well.

COMMITTEE MEMBER MIDDLETON: Okay. Thank you.

CHAIRPERSON MILLER: Okay. President Taylor.

VICE CHAIRPERSON TAYLOR: So, yeah, I was like, ooh, that's a question.

(Laughter).

VICE CHAIRPERSON TAYLOR: So I just wanted to make sure one of the things that you mentioned in the ESG part was the GRESB workforce practice. So I just want to make sure that we're using those for -- and I think GRESB isn't doing really data collection. I don't know if we're getting that from them or not, but you may want to look into that for the workforce issues, as well as the rest of the sustainability for our buildings and stuff.

And then I just wanted to say, I swear, Sarah, the last time you told us that you would come back to us on the refresh on the RCP, you said summertime. And it is summertime.

MANAGING INVESTMENT DIRECTOR CORR: I believe -- I believe --

VICE CHAIRPERSON TAYLOR: In fact, today is the first day of summer.

(Laughter).

MANAGING INVESTMENT DIRECTOR CORR: I believe I did say in the next fiscal year, but we will try to put it in the first part of the fiscal year.

VICE CHAIRPERSON TAYLOR: I appreciate it. Thank you very much.

CHAIRPERSON MILLER: Okay. I'm not seeing anymore requests to speak on this item. And so it looks like we've been at it for about two hours now, so I think if we could take a five minute break and then we'll finish up --

VICE CHAIRPERSON TAYLOR: Let's take a 10-minute break.

CHAIRPERSON MILLER: Ten minute. Okay. Ten minute break. Ten minute break. Yeah. I'm told I'm -- so we'll be back at 3:41 or thereabouts.

(Off record: 3:32 p.m.)

(Thereupon a recess was taken.)

(On record: 3:44 p.m.)

CHAIRPERSON MILLER: Okay. I'm going to go and call us back to order. Let's jump it right back in here with the introduction to risk budgeting strategy, Item 6f.

CHIEF INVESTMENT OFFICER MUSICCO: Thank you for that. And again, as a reminder, this is one of those Board education pieces that we're delighted to chat with you about. And there will be more on this in the months and years to come for sure. But to kick it off, we have Michael Krimm joining us. Sterling and Michael's teams have been working very hard at getting our own team up to speed and thinking through different aspects of active risk budgeting, and so we wanted to present to you where we're at on our thinking.

(Thereupon a slide presentation).

INVESTMENT DIRECTOR KRIMM: Thank you, Nicole. Michael Krimm, CalPER staff.

So this agenda item is intended to provide transparency on a management technique called risk budgeting that is being implemented within the Investment Office.

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INVESTMENT DIRECTOR KRIMM: The goal of risk budgeting is to ensure we make most efficient use of the leeway granted to staff in policy to pursue value-added incremental to the policy benchmark. Risk budgeting encompasses the sphere of activity we call active risk, which broadly speaking means the sum total of all our deliberate departures from a theoretically precise interpretation of implementation of the policy benchmark. Active risk budget is thus distinct from the primary risk allocation decision that our institutional makes, which is strategic asset allocation. That is done in the context of the asset liability management process.

In contrast to strategic asset allocation, where the Investment Committee is central in the decision process, active risk budgeting is primarily about how CalPERS CIO manages her team and the portfolio to add additional value above the strategic asset allocation, and you heard Nicole talking about value-add earlier, so that's going to be a theme here.

For this reason, this agenda item is purely informational. We are not recommending a change in policy, nor requesting additional investment leeway. Rather, our goal today is to give you a sense of one way in which we are seeking to optimize the use of the leeway you have already granted in the form of policy. Risk budgeting is a management process often applied among larger institutional asset allocators more commonly outside of the U.S. Its implementation varies depending on organizational context and you may hear the label applied in different ways. We are implementing risk budgeting in the way we think makes most sense for CalPERS and our specific situation.

So I've broken the presentation into two pieces. First, I'm going to spend a little time on theory, so we did promise and education item at the end of the day, and just give you a little theoretical context to give you the foundational logic that underlies risk budgeting. And then I will spend some time describing how this process fits into CalPERS' current governance structure and how it's being implemented within the organization.

So can we have the --

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INVESTMENT DIRECTOR KRIMM: Can we jump to four.

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INVESTMENT DIRECTOR KRIMM: All right. So I'm going to start with a stylized representation of a traditional risk allocation process. Strategic asset allocation is appropriately the starting point being the most important driver of risk and return in the portfolio. Strategic allocation produces a set of weights to our various asset classes, which are then embodied in a policy benchmark also known as a policy portfolio. And then decisions about where and how much active risk to take are made for each individual asset class relative to its respective portion of the policy benchmark.

There are several issues with this approach to allocating active risk. First, active allocation is tied implicitly to percentage weights in the asset allocation. But what if the opportunity to use active management is lower in a higher weight asset class and higher in a lower weight asset class? The problem is that asset allocation weights are based on underlying economic considerations that may be different from the opportunity set for active management to add value in various segments. We can and do work around this in practice, but still the emphasis on allocation weights as a starting point can create a subtle anchoring bias in active decision-making.

A second issue with this traditional approach is that it tends to be driven bottom up. As a result, there is a tendency to miss the interaction across programs of various active strategies to potentially get inconsistent or suboptimal active risk allocations across programs or to negligent active opportunities in asset classes not currently in the benchmark. In other words, the top-down view is not naturally integrated into the decision process. Again, in practice, the top-down view does get applied, but it tends to be more as an override than as an ongoing complement to bottom-up decision-making.

Over the last 10 years, CalPERS has made great strides in moving beyond the traditional approach shown here. The level of transparency and coordination between investment programs today is not recognizable to those involved in the process 10, 15 years ago. There's awareness and consideration of the total portfolio when making individual active risk decisions. Still, we think we are missing the consistent framework and process necessary to institutionalize these improvements, and that's what this risk budgeting is about.

If we'd jump to page five, please.

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INVESTMENT DIRECTOR KRIMM: All right, so before I go into the new process in contrast to the schematic I just showed you, I'm going to step back and go kind of even deeper into underlying theory here. It starts with a simple question that one should always ask, whether of an individual investment opportunity or really even of an entire portfolio. And that question is why should we expect to get paid a return in the first place? Who is at the other end paying me the return? Where is the money coming from?

The answer to this question helps us to recognize that there are two very different ways to make money in investing, and they call for different separate risk allocation processes. First, for any investment, there is almost always what we call a systematic component of the return. In fact, for both our portfolio and pretty much any institutional portfolio, systematic drivers will explain the majority of both risk and return outcomes. What we call systematic returns are essentially our reward for being -- for being a provider of capital in the global economy. Systematic returns, as I use the term here, represent a combination of interest rates, which is the basic value of money that we're landing or investing, plus an additional compensation for taking additional risk, which we called risk premiums.

Let me give a few examples. As shareholders in companies, either public or private, we part -- we get to participate in the full economic upside of those companies in exchange for taking the riskiest place on the capital structure as equity owners, so we have maximum potential upside as well as downside. Therefore, we should expect equities to generate relatively high returns. And in practice historically, equities have generated among the highest returns of any assets far exceeding the return on cash.

So that's what we call the equity risk premium. Similarly, if we instead lend money to a company, for example, by buying its bonds, we have a higher place in the capital structure than an equity holder and we are more likely to get our money back in the event of a default than with an equity position. Correspondingly, bonds tend to have lower risk than equities, but also generate lower returns, but they should still be expect to outperform a cash investment. In other words, we should still expect a premium. And so that kind of logic flows through all of our asset classes in all the subsegments of our asset classes, and that is kind of the idea behind systematic drivers of returns.

In contrast to these drivers, I'm going to focus on the right side, the number 2 here now. Value-add is a fundamentally different return driver. And when I say value-add, in this case, it's synonymous with active return or active risk. Value-add is about beating the market. It is about picking the top quartile while someone else gets the bottom quartile. It's about having access to great opportunities or great managers on account of our size or relationships that maybe other investors don't. And you heard Anton talking earlier about persistence among certain types of managers. It's about being overweight a winning sector relative to a losing sector. It can also be about driving down fees and costs relative to some benchmark level of fees and cost. Fundamentally, value-add is about getting paid for skill or closely related taking advantage of unique structural advantages.

Importantly, these return drivers are not neatly separated across individual investments. Almost any asset we buy incorporates all of these return drivers. One of the ways we can unpack the difference is to use benchmarks or indices. Indices can be used to isolate systematic drivers, such that any departure from the index is described as value-add or active risk. This approach is well grounded in theory, particularly for equities. But even for other asset classes -- I would say for other assets classes in particular for privates, it can be useful, although the line is not always so clear between value-add and systematic drivers of return.

As a practical matter, we can broadly set up a benchmark as kind of a baseline representing mostly the systematic portion of returns and then treat differences to the benchmark as active returns or value-add. And this, in fact, how CalPERS is governed and many of our peer institutions as well.

Can we skip ahead just for time's sake to 7.

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INVESTMENT DIRECTOR KRIMM: Thank you.

So when we look at these return drivers, there's some important distinctions and they will lead to kind of how we think about managing the two allocation processes. Systematic returns are about gaining exposure to broad asset classes. Decision-making thus centers around research into the structure of markets and of the economy. Systematic returns are reliable in the long run, because they are intrinsic to the functioning of the modern industrial economy, but they are also risky, meaning we can have long painful drawdowns. It's usually tied to the economy and exactly the same time that our stakeholders are also experiencing economic pain. And I would just reference the slide Nicole spoke to earlier in her remarks that most of our risk is coming from assets that are sensitive to economic growth. And that's an example of one of the challenges of earning returns from systematic drivers. That's the kind of risk we take to earn the returns.

In contrast, value-add being competitive is not as reliable. It requires -- in other words, I just want to make this clear. Systematic returns are in sense reliable. There are -- there's at least a hundred years of history and research across the global markets supporting the existence of a positive return above cash from equities, and that is the foundation of much of our -- of our asset allocation, and similarly for the under -- other assets. So, in that sense, they're reliable, even though they're risky and we can have painful drawdowns.

But again, in contrast, value-add is not as reliable. It requires constant innovation to access, because the edge, the unique institutional advantages that we need to have to generate value-add are constantly being competed away. You have to fight for every basis point and yesterday's winning strategy may not work tomorrow. In any -- in some aspects, value-add can even be a zero sum game. For example, when it comes to picking managers for us to be top quartile, someone else has to be the bottom quartile. Other aspects of value-add can also be more structural and less zero sum.

For these reasons, risk allocation and value-add is as much about managing people, and teams, and managers as it is -- and it's also about building our institutional capabilities. In other words, it's about organizational stuff. It's as much about that as it is about kind of pure economic research. Although there is such a component as well. And that sphere of value-add decision-making as opposed to systematic returns is what risk budget is seeking to address.

Let's jump to 9, please.

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INVESTMENT DIRECTOR KRIMM: So just to conclude, the kind of theoretical discussion, this is an updated schematic of a risk allocation process that integrates risk budgeting for managing active risk taking. So first of all, on the left side of the diagram, strategic asset allocation remains as today, but for active risk, the top level starting point is the establishment of value-add targets and related active risk budgets overall for the portfolio as well as by program, and that's illustrated by the little table on the right.

The distinction from the traditional process here is to tie active risk allocation and value-add goals not to segments, percentages of the strategic allocation, but essentially to people, to programs, to parts -- to organizational units that are in turn managing the various asset segments.

Each program is expected to add value and will receive an active risk budget in line with its respective opportunity set in its assets class, its inherent structural advantages, skill, and market characteristics, and so on. At the highest level, we expect to review these quote budgets on a regular basis, for example, annually. Similarly, these budgets allow room for planning. For example, we can establish expectations of value-add around the current set of strategies in the portfolio, while we also formulate longer term goals as we build program capabilities and adjust the portfolio over time.

Keep in mind that in all of this, we are talking about value-add and active risk, and that means relative to the underlying asset allocation and relative to the policy benchmark. And all of this is being done within the confines of existing policy limits that have been established by the Committee. Each program will continue to manage its respective asset class holistically as today and within the leeway established by policy.

But risk budgeting will create an increased emphasis on how each program's activities utilize that leeway relative to policy. The more a program's portfolio varies from the base line implementation of the asset class embodied by the policy benchmark, the more value it is expected to add. This is the idea of an incremental return commensurate with risk.

Let's skip to the next section. We're going to go into a little bit of the governance and organizational aspects now. Page 13, please.

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INVESTMENT DIRECTOR KRIMM: So what I'm presenting you here is kind of a simplified representation of how CalPERS governance works around the areas of strategic asset allocation and as well as active risk and value-add. And again, I've kind of distilled from policy here. This is not some kind of, you know, legal interpretation of policy. It's just for kind of trying to communicate the points.

But let me start with strategic asset allocation, which is a contrast to the risk budgeting that I'm going to talk about. In strategic asset allocation -- and again, strategic asset allocation is the process by which we determine our exposure to systematic risk and return drivers. That process, the key decision-maker is you as the Investment Committee. And you have a formal role to approve capital market assumptions, CMAs, as well as finally to select a policy portfolio. And the role of staff is to research and recommend portfolios and portfolio options and to advise you on trade-offs. This is not to say that staff does not share responsibility for the outcomes of the strategic asset allocation, but clearly the Board has a central and formal role in the process.

In contrast, when it comes to active risk and value-add, which is what risk -- active risk budgeting is about, the central decision-maker is the Chief Investment Officer. The role of the Board in contrast is to establish appropriate policies that govern staff's discretion to depart from the policy portfolio. In other words, you have set the playing field for taking active risk, which Nicole then allocates across the portfolio and across her team. It's the Board's role to authorize the appropriate business -- enable business changes, as well as monitor outcomes.

Staff's role is essentially to execute propose, build, and then run active strategies, manage total portfolio trade-offs, and provide transparency. And that item that I circled there, managing total portfolio trade-offs, that is the realm of risk budgeting. And again, I want to emphasize, all -- this governance is -- this is how things are today and we have always done these activities. Risk budgeting is coming in and trying to take this area that we've circled and trying to make it better, and that's where it fits in.

Let's jump to 15, please.

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INVESTMENT DIRECTOR KRIMM: So one of the outcomes of risk budgeting will be to create a little more formality around various interactions within the Investment Office. And this page illustrates some of the key organizational roles, as we envision risk budgeting to unfold at CalPERS.

At the center of the model is the concept of an ongoing dialogue, potentially formalized as an annual planning cycle, similarly to, you know, financial budgeting, but likely involving touchpoints throughout the year. Within that process, the Chief Investment Officer is the ultimate decision-maker. The programs, as today, propose, develop, and implement strategies. And then the total portfolio team, which Sterling and I are representing here, brings -- facilitates the conversation and provides the integrated portfolio perspective.

In addition, the total fund team is expected to provide a little bit of an independent view as well when even a counterpoint, if not challenged, to program driven assumptions. So we're not seeking to build obviously a confrontational process, but we are trying to ensure some richness and back and forth institutionalized into the ongoing discussion between the CIO and the programs about their value-add targets and risk budgets.

Next page, please.

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INVESTMENT DIRECTOR KRIMM: I'm just going to conclude with kind of Where we are in setting this up. I'm not going to go the individual points and happy to provide more detail on the progress this year, but I would summarize that we have -- I think we have taken the crucial step this year of getting started. I think we have started to kind of plant a -- maybe it's kind of like we've planted a tree and it's there now. It's visible. It's part of the process. It's going to continue to take what I would call some managerial direction and intention over the next few years. But the long-term goal is for this to become a kind of an inherent fixture of how we do risk allocation at CalPERS that kind of runs by itself without kind of requiring a project to push forward.

So that's the end of my comments. I'm ready for questions.

CHAIRPERSON MILLER: Okay. Thank you. And we do have some questions. Director Pacheco.

COMMITTEE MEMBER PACHECO: Thank you very much for your -- thank you for the presentation and so forth. So my question is back to slide number 10 and I want to go -- let me go back to mine as well here. So regarding the true value-add is diversifying to systemic risk in -- you know, I'm just curious how confident you all -- are you that the increased active risk taking will not meaningfully increase the total fund's risk profile, if you can elaborate on that, please?

INVESTMENT DIRECTOR KRIMM: Yeah. Thank you for going to this page. I skipped it for the sake of time, but I'm happy to -- glad to get to talk to it.

COMMITTEE MEMBER PACHECO: Yeah. Thank you. I appreciate it.

INVESTMENT DIRECTOR KRIMM: How confident are we? I would say we're -- we're probably a little bit more confident than we can be in whether there will be positive value-add in the first place. So in general, this game of generating value-add is a difficult one, so we have to be appropriately humble in setting our expectations. But I would say the process of understanding the nature of the risks we're taking and the ability to control those risks is a little easier to predict and manager than whether we actually make money.

So I'd say we're reasonably confident that if pursued appropriately value-add can, in fact, be diversifying. Now, I want to emphasize something, and the chart here is a little misleading just how it came out, because it implies that the diversification eliminates, right? That's not actually true. It does, with pretty reasonable assumption, get pretty diversified away, but there is a slight change in the risk profile of the plan. And we do expect a little more value-add to add some amount of incremental risk to the total portfolio.

But bear in mind, you have, at some level, already established your comfort with that through policy and through the broad range of constraints including the tracking error constraint, but also all the other constraints on private assets. So it certainly will stay within those boundaries of that comfort level. But in terms of total portfolio outcomes, we do expect diversification.

One other comment on the topic of diversification, diversification does not mean hedging. In other words, it does not mean we reduce the risk. There is the possibility with active strategies with value-add --

COMMITTEE MEMBER PACHECO: Um-hmm.

INVESTMENT DIRECTOR KRIMM: -- of drawing down even at the same time that the economy draws down, rather -- but the intention is that you don't guarantee the drawdown, that you also have the potential of outperforming when the economy is drawn down. It's about establishing a set of bets that will not just necessarily always draw down when the economy draws down.

COMMITTEE MEMBER PACHECO: Thank you very much for those -- that comment.

CHAIRPERSON MILLER: Okay. Lynn Paquin.

ACTING COMMITTEE MEMBER PAQUIN: Thank you. Thank you for the presentation. I was just curious and this is a question, I think, on the last slide that you showed. And are you intending to create a risk budget per asset class or is it one risk budget and then it will be kind of taking a look at the whole and how it all lays out?

INVESTMENT DIRECTOR KRIMM: The current plan is to create essentially one risk budget per program --

ACTING COMMITTEE MEMBER PAQUIN: Um-hmm.

INVESTMENT DIRECTOR KRIMM: -- so per managing director, if you will. You know, we may -- we may modify that a little bit as we go along, but that's the level at which we want to establish it, so each MID will essentially have a target value-add and a target level of risk defined in various ways that they're expected to use to achieve that value-add relative to their parts of the allocation.

Dan, you want to jump in.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: Yeah. The only thing I would add there to your question is both, right? So we will have a total fund value-add target and then that allocates down mathematically to each program having a value-add target.

INVESTMENT DIRECTOR KRIMM: Thank you.

ACTING COMMITTEE MEMBER PAQUIN: Okay. No, that makes sense. And then how we determine which asset class gets -- would they all be equal or I'm assuming that there'd be differences depending on what strategies?

INVESTMENT DIRECTOR KRIMM: Yeah, I think that's the -- that's actually the critical task of risk budgeting to decide and it will not be equal. It's a function of the opportunity set in each program, the capability, where we are in building out the portfolio. And it can look very different across asset classes.

ACTING COMMITTEE MEMBER PAQUIN: Okay. Great. Thank you.

CHAIRPERSON MILLER: Okay. It doesn't look like I have any more requests to speak. And I thank you very much for this very illuminating presentation. And it really helps us understand the approach a lot better than when we came in the door. Thank you.

Okay. And that brings us to summary of Committee direction.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: All right, we didn't have any specific Committee direction, but there were some -- certainly some changes that we have, you know, action to come back on. First of all, with 5a, the Insider Trading Policy, we will get that out to our unions and our supervisory organizations and then bring it back in September. Director Middleton, you had the question on where we are relative to the metrics that Mr. Carney mentioned. We'll have that -- that will take a calculation. Probably when we come back in July, we'll be able to bring that back.

And then the last one was the Responsible Contracting Policy update for real assets -- for real estate, sorry. And I think that is due for an update on where we are compliance in November, so maybe we'll plan on bringing that back around November to sort of thread the needle between summer and the next fiscal year.

And I think the last thing that I had also was Tom just mentioned to me that the consultant -- Wilshire does have something for the consultant closed session, so hopefully we can make that happen. And that's all I have.

CHAIRPERSON MILLER: Thank you. I think that about covers it. And so I don't believe we have any -- oh, there we go. Director Walker.

COMMITTEE MEMBER WALKER: Hi. I just have one thing I'd like to add. So this is the second meeting where we've had people testify and -- about people we're invested with and horrific things that we're hearing, and so how do we hear back from staff or you on what's been done, or if anything has been done, because I would hate to think that people come and share their experiences and their stories and we're just, oh, that's sad and there's nothing else done. So I'd like to hear back.

DEPUTY CHIEF INVESTMENT OFFICER BIENVENUE: Certainly, I mentioned actually to Mr. Pacheco that while it wasn't directed, we certainly plan to follow up on the public comment that happened and we can definitely make a point of bringing that back to the Committee.

COMMITTEE MEMBER WALKER: Thank you.

CHIEF EXECUTIVE OFFICER FROST: Yeah, and just to add to that. On the member-specific issues that come before you for public comment, you do get the email from me stating, you know, the team followed up and here was the resolution of that issue, but we can do the same thing on the investment side.

COMMITTEE MEMBER WALKER: Appreciate it.

CHAIRPERSON MILLER: All right. Thank you. Okay. So I don't think we have any public -- any requests from the public to speak for 6h. So at that point, we will recess now into closed session for Items 1 to 6 from the closed session agenda, then we'll immediately reconvene in open session after the closed session. So thank you.

(Off record: 4:13 p.m.)

(Thereupon the meeting recessed into closed session.)

(Thereupon the meeting reconvened open session.)

(On record: 5:15 p.m.)

CHAIRPERSON MILLER: Okay. I hereby reconvene the open session of the Investment Committee meeting, and barring any objections, we are now adjourned for the day.

(Thereupon, the California Public Employees' Retirement System, Investment Committee meeting open session adjourned at 5:15 p.m.)

CERTIFICATE OF REPORTER

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing California Public Employees' Retirement System, Board of Administration, Investment Committee open session meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed, under my direction, by computer-assisted transcription;

I further certify that I am not of counsel or attorney for any of the parties to said meeting nor in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 25th day of June, 2023.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
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