Decarbonization Advisory Panel Beliefs and Recommendations

A report to the Comptroller of the State of New York as the sole trustee of the New York State Common Retirement Fund (the Fund) on how the Fund can best mitigate investment risks stemming from climate change and maximize opportunities from the new, low-carbon economy. The recommendations herein represent the consensus of the six panel members.

Panel members

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Introductory Remarks

The Decarbonization Advisory Panel (the Panel) was charged with advising "the Comptroller, as trustee of the $209.1 billion New York State Common Retirement Fund (Fund), on how best to mitigate investment risks stemming from climate change and maximize opportunities from the new, low-carbon economy."[1] The Panel was appointed in March 2018 by Governor Andrew Cuomo and Comptroller Thomas DiNapoli.

To assist with the process, the Fund met with the Panel on multiple occasions over the course of a year. Staff from the Fund responded to the Panel's questions and provided an accounting of past and current climate-related activities. The Fund also facilitated the Panel's requests for information from trusted third-party reports and industry experts. The Panel would like to thank the Fund staff for their openness and willingness to discuss this topic.

The Panel recognizes the Fund's leadership and depth of activities with regard to climate change, particularly with respect to active ownership. We specifically call out and commend Comptroller DiNapoli for his ongoing leadership on climate change.

Based on the Panel's assessment of the latest climate science, our review of the Fund's materials and our expertise at the intersection of climate change and finance, the Panel believes major, additional steps will be necessary to protect the financial interests of the Fund's beneficiaries in the future. This document lays out the Panel's foundational beliefs (Part 1) which, in turn, drive our consensus recommendations (Part 2). Part 1, Part 2 and Exhibit A (Minimum Standards Framework) represent a united view from the entire Panel. The two appendices are personal statements from individual panel members. While the Panel was not in consensus on the entirety of these pieces, the ideas articulated in these statements influenced the Panel's final recommendations and the Panel agreed it was appropriate to append them in service of additional context and insight.

The Panel views climate change as not one discrete risk factor or even a set of factors, but as a macro disruption across industries (e.g., energy, agriculture, mobility, etc.), geographies (e.g., emerging markets, coastal property, flood plains, etc.) and arenas (e.g. physical, policy, technology, liability, etc.). It will fundamentally change economic systems and thus has a financially material impact on investing. While there is uncertainty on when and where these impacts will fully manifest, the transition to this new future is already well underway. There is no opting-out of climate consequences — to invest as "usual" is to take a bet against scientific principles. To delay action is, itself, a decision to enter unprepared into a more volatile investing environment and a more abrupt market correction.

The Panel acknowledges that in undertaking all or even most of our recommendations, the Fund will confront challenges with respect to staffing and compensation. To allow for these challenges, the recommendations are intended to enhance the Fund's internal operations as

[1] https://www.osc.state.ny.us/press/releases/mar18/030618.htm

well as expand its relationships and leverage the skills and resources of its managers, index providers and consultants.[2]

The Panel's recommendations have been developed to best prepare the Fund for financial impacts as climate change continues to unfold. The Panel sees real risk to the value of the Fund and its ability to achieve a target annual rate of return if the Fund is not prepared for the transition to a low-carbon economy or for the worsening physical risks from climate change. The cost of unpreparedness to the Fund's operations is likely to be significant, including the potential to impact contribution rates. Therefore, we believe our recommendations are consistent with the goals of a responsible investor. However, we understand these recommendations may be challenged in the short-term as the market does not currently reflect the full extent of climate change risks and opportunities. These recommendations break from the status quo and pursuing them will cause the Fund to face challenges in its operations and investing practices.

The Panel has conviction that the market will evolve through efforts by bodies such as the Financial Stability Board, but it may take time. The Panel recognizes that there is uncertainty in the short-term losses and gains that may be associated with its recommendations. In recognition of these challenges, the Panel has built flexibility into its recommendations rather than prescribe a fixed process or implementation road map. The Fund may choose to pilot or phase-in initiatives, which would also allow for course corrections as new information becomes available.

The Panel's recommendations are sweeping and ambitious. We believe our comprehensive approach will best prepare the Fund for resilience in the face of climate change.

It is in this spirit that the Panel offers our beliefs and recommendations for the Comptroller's consideration and with a hope that others will follow the Fund's lead.

[2] The Panel is not suggesting that these challenges should be solved 'at all costs', but expect that additional expenses may be small relative to the avoidance of loss and realization of opportunities derived from the Transition now underway.

PART 1
Foundational Beliefs: Science, Risk and Opportunity

In support of its recommendations, the Panel submits the following foundational beliefs.

On the Fund's History with Climate-Related Risks and Opportunities

- To date, the Fund has taken leading steps to address climate-related risks and opportunities including:
  - Committing $10 billion to sustainable investments, including $4 billion into a first-of-its kind Low Emissions Index;
  - Participating in climate risk and related analyses in partnership with third-party experts;
  - Filing 140 shareholder resolutions, resulting in 55 agreements, with companies to encourage analysis of climate risk and the decarbonization of operations; and
  - Participating in several United Nations Climate Change Conferences and advocating for climate issues at the global, federal and state levels, including the Paris Agreement, the Clean Power Plan, fuel efficiency standards and carbon pricing.
- The Fund is a leader in effective active ownership as is demonstrated by the length of time it has dedicated to engagement, the volume of activities it has joined and led,[3] and the results the Fund has achieved in driving significant changes in company policies, practices and disclosure.[4]
- The Panel recognizes and commends the Fund for its leadership and sees our purpose as primarily to support, enhance and embolden the Fund's strategy commensurate with known medium and long-term risks and opportunities while navigating near-term uncertainty.

On the Science of Climate Change

- The Panel recognizes climate change as an existential threat to global economies, markets and earth systems.
- The Panel's understanding of climate science and impacts is informed by the consensus of global climate scientists acting within the Intergovernmental Panel on Climate Change (IPCC), including the IPCC's most recent summary for policymakers report entitled "Global Warming of 1.5°C."[5]

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[3] For example, the Fund is currently a member of the Climate Action 100+ effort.
[4] See https://www.osc.state.ny.us/reports/esg-report-jan-2019.pdf and previous reports.
[5] https://www.ipcc.ch/sr15/ In addition, several other documents were referenced by Panel members and these included the National Climate Assessment, U.S. National Academy of Science studies and business groups such as the CCLA, which reflects views of mainstream economists and business people.

- The Panel recognizes:
  - That the consensus of climate science finds that 2°C of warming will cause significant environmental and economic damage, and in general, avoiding significant value damage would require staying within 1.5°C of warming;[6]
  - To stay within 1.5°C warming, global carbon emissions would need to be cut dramatically by 2030 and achieve net zero by 2050;
  - Global carbon emissions are at a record high and, after slowing down for a brief period, began to climb again in 2018;[7] and
  - At 3°C or more of warming, as is implied by current national commitments from the Paris Agreement, even if achieved, researchers predict major value destruction and reduction in GDP.[8] This large risk is underappreciated by the public and undervalued by the marketplace.
- The Panel believes that climate change impacts as described above will require both adaptation and mitigation measures.
- Given the scientific understanding to date, the Panel shares the belief of the just released UN Global Environment Outlook[9] that urgent action is necessary to address climate-related risks and opportunities and the pace of progress today is far below what is needed. The window of opportunity to avert severe and long-term consequences for human health, human rights, biodiversity and global prosperity is closing swiftly.

On Climate-Related Financial Risks

- The Panel believes that climate change poses significant risk to the Fund's investment portfolio across equities, alternatives and credit, as most (if not all) do not currently adequately price climate-related risk.
- The Panel believes two broad categories of climate-related risks will impact the Fund's assets in the immediate, near and long-term: physical risks and transition risks (as defined below).[10]
  - **Physical risks** result from chronic and acute changes in climate patterns including an increase in the frequency and intensity of heat, drought, hurricanes and typhoons, and extreme downpours. These changes create disruptions to supply chains, real assets (including land and agriculture), health and movement of people, among other impacts. Legal liabilities for companies and investors may play a role here as well.
  - **Transition risks** rise from a suite of factors as economies and enterprises move from high to low-carbon intensity and from low to high-climate resilience (the Transition). Price dislocations can result from misjudging the pace and scale of technology

[6] https://tyndall.ac.uk/sites/default/files/publications/briefing_note_risks_warren_r1-1.pdf
[7] https://www.globalcarbonproject.org/carbonbudget/18/files/Norway_CICERO_GCPBudget2018.pdf
[8] https://www.nature.com/articles/s41586-018-0071-9
[9] https://www.unenvironment.org/global-environment-outlook
[10] https://www.tcfdhub.org

innovation and failing to prepare for dramatic and abrupt shifts in policy and regulation. Legal liabilities and regulatory risks for both companies and investors exist here too.

- The Panel observes that companies and regional economies are already suffering material losses as a result of physical climate risk.[11]
- The Panel believes enough global warming is already "baked into the system" to cause significant disruption and impacts to portfolios from physical risk regardless of the speed or scale of the Transition.[12]
- The Panel believes the Transition is well-underway in the energy sector and that companies and utilities heavily dependent on the extraction, refinement, distribution and combustion of fossil fuels will be disrupted by a range of factors. These risks include liability for carbon-emission effects, value depression and demand shifts resulting from innovation and consumer choice.
- The panel recognizes the "policy ambition gap" between the Paris goal and the current policy trajectory. This gap poses significant risks to investors and companies, particularly because of what the Panel sees as a likelihood that governments will be forced to step-in with immediate and stringent regulations that would, in turn, result in abrupt and disorderly impacts on global markets.[13]
- The Panel believes uncertainty with regard to climate risk is not altogether dissimilar to timing any other investment decision and should not be a reason to support the status quo. Being too early in avoidance of the risk of permanent loss is much less of a danger than being too late.[14]
- The use of ESG[15] factors in investing can include a wide range of sustainability factors and combining E, S and G creates situations where a company well positioned for the Transition might receive low ratings because of its social and governance practices or, conversely, a company poorly positioned for the Transition could receive high ratings because of its social and governance practices. Therefore, ESG ratings should be used with caution in the context of climate change.

On Climate-Related Financial Opportunities

- The Panel believes managers and companies with deeply embedded and carefully analyzed climate-related strategies, operations, metrics, governance and incentives will outperform the market as physical risks not properly underwritten in capital markets materialize and the Transition unfolds.[16]

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[11] The insurance industry routinely publishes data on losses due to climate change. One such reference is: https://www.swissre.com/institute/research/sigma-research/sigma-2018-01.html.
[12] Multiple studies including: https://www.nature.com/articles/nclimate3357.
[13] https://www.unpri.org/download?ac=5363
[14] https://www.bis.org/review/r151009a.pdf
[15] Generally environment, social and governance issues.
[16] https://www.generationim.com/sustainability-trends/sustainability-trends-2018/

- The Panel believes the Fund can achieve superior risk adjusted returns and protect its portfolio by pursuing investments that account for the impacts of physical and transition risks.
- The Panel believes sustainable assets (as defined in the Recommendations below) benefit beneficiaries financially and improve quality of life.
- The Panel recognizes that global investment in clean energy and low carbon opportunities must increase three to five times current levels in order to stay within 2°C and 1.5°C warming respectively (the "investment gap").[17]
- The Panel believes that within the "investment gap" there exists significant opportunity for investors to capitalize on strategies that maximize resource efficiency in a variety of areas including, but not limited to energy, transportation, agriculture, buildings, circular economy and climate resilient infrastructure.[18, 19]
- The Panel believes soft barriers, such as minimum investment values and percent ownership criteria, consultants, benchmarks and compensation structures needlessly limit the Fund's ability to capitalize on and prepare for the Transition. The Fund will need to pursue modified or innovative processes to capitalize on climate-related opportunities at scale.
- The Panel believes, in general, a greater degree of active oversight will be required to manage index products to achieve alignment with physical risks and the Transition.
- The Panel believes approaches that rely on backtesting may lead to wrong conclusions in investment decisions in light of the nature of climate change impacts. Backtesting is akin to navigating a car down the road using only the rear-view mirror. This strategy works when the road ahead mirrors the past — it does not work when a hard turn is needed to avoid a cliff up ahead. Climate change promises sharp turns ahead.
- The Panel believes the Fund can further enhance its leadership position among US pensions by establishing and promulgating investment standards ambitious in recognizing and coping with both the physical and transition risks of climate change.
- The Panel has conviction that its recommendations stand firmly on a compelling business case that climate risks and opportunities present real financial consequences for the Fund.

Given these foundational beliefs, in particular the timelines climate scientists have made evident, the Panel urges the Fund to act on its recommendations with urgency, particularly the key ambition. The Panel acknowledges the Fund may require preparation in process and resources before it is able to employ all of these recommendations. Regardless, the Panel encourages the Fund to start where it can and grow ambition swiftly.

[17] https://www.iea.org/weo2018/
[18] https://www.ceres.org/sites/default/files/reports/2018-05/Ceres_In_Sight_Clean_Trillion_May10_2018.pdf
[19] https://www.mckinsey.com/business-functions/sustainability/our-insights/resource-revolution-how-to-capture-the-biggest-business-opportunity-in-a-century

PART 2
Panel Recommendations: Pursuit, Processes and Products

The Panel recommends a bold ambition, a big first step, and a suite of actions with regard to the Fund's investment processes and products that support both the ambition and first step. Our recommendations address both mitigating risks and capitalizing on investment opportunities.

Ambition and First Step

The Panel's ambition for the Fund takes into consideration the Panel's belief that securities across the entire portfolio are exposed to physical and transition risks in the business-as-usual scenario. Our "first step" recommendation specifically addresses the Fund's desire to capitalize on the emerging investment opportunities that directly promote adaptation to or mitigation of climate change impacts. The overarching ambition and first step work together to increase the Fund's resilience to climate change.

The Panel recommends the Fund pursue alignment of its entire portfolio with a 2-degree or lower future by 2030 in accordance with climate science consensus. As a first step, the Panel recommends the Fund establish a new "climate solutions" allocation through which the Fund can substantially increase its commitment to investments with a proactive approach to climate risk and opportunity in the near term.

Definition of "Sustainable Assets"

For the purposes of this document, the Panel defines "sustainable assets" as investments, in any asset class, that are consistent with a 2-degree or lower future. Those assets may directly or indirectly work to help create that future or have a neutral effect on its development. The Panel notes that multiple pathways to a 2-degree future have been modeled and recommend the Fund, in consultation with experts, develop a point of view regarding which scenario(s) it deems appropriate and credible.[20, 21] The pursuit of sustainable assets is as much about the decision-making process as it is about the assets themselves. As such, the Panel recommends

[20] In digesting the definition of "sustainable assets" it can be helpful to consider the counterfactual. Assets that are not sustainable are those that assume an expected value that is inconsistent with the physical impacts and transition pathways of whichever warming scenario(s) the Fund assumes. In the end, sustainable assets have integrity against science-based assumptions; unsustainable assets do not.

[21] In its March 25, 2019 announcement, BNP Paribas Asset management referenced the use of the Paris-compliant trajectory as determined by the International Energy Agency's (IEA) Sustainable Development Scenario (SDS) as its reference case. https://docfinder.bnpparibas-am.com/api/files/1FC9FC6C-0DA8-468E-90B3-016DDB5CD270. Note that the Panel is not recommending any particular trajectory and only cites this as an example of how an existing one may be leveraged.

the Fund develop and apply "Minimum Standards" across all of its investment decisions. (See Exhibit A.)[22]

Rather than making a narrow recommendation to divest from specific stocks, the Panel supports the concept of Minimum Standards to guide the Fund in its decisions to sell securities and/or avoid investment managers whose operations and strategies are not sustainable. In pursuit of 100% sustainable assets, divestment of companies not consistent with a 2-degree future is "baked in."

The Panel recognizes so-called "low-carbon indices" as a first step towards decarbonization. These products however, rely on a relatively narrow view (sometimes, but not always, due to data constraints) of what it means to create portfolios that mitigate physical and transition risks. The data to inform decarbonized portfolios need to extend beyond carbon emissions of an organization and move to an analysis that models product demand changes across industries and companies, changes in cost structures across value chains, and an organization's competitive positioning in the marketplace.

Why by 2030?

Much of the argument for a 2030 target was articulated in the Panel's beliefs; a few points are worth reiterating. According to the IPCC,[23] model pathways with no or limited overshoot of 1.5°C require global CO_2 emissions to decline by roughly 45% by 2030, reaching net zero in 2050. To avoid overshooting 2°C, global emissions reductions must decline roughly 20% by 2030 and reach net zero around 2075. The increase in global economic damages between 1.5 and 2 degrees is significant; a 3-degree world verges on unrecognizable.[24] By 2030, the planet will be locked into temperature rises that may put the Fund's value at significant risk. These dates are driving mitigation efforts around the globe.

First step: A New Allocation

The panel recommends the Fund develop a new "climate solutions" allocation. This allocation would rise substantially as a share of the portfolio in the short-term. Over time, the Fund can leverage the data and relationships accumulated through the allocation, combined with its existing and new efforts across all asset classes, to more quickly implement the sustainability overlay across the entire portfolio so as to achieve 100% sustainable assets before 2030.

The climate solutions allocation acts as a leading edge driving the Fund's sustainability goals. The allocation would be multi-strategy (including both equities and debt). Investments under this allocation share a common thread of actively supporting the Transition or addressing adaptation problems. The Fund has already committed $6 billion to investments consistent

[22] The Panel suggests that in working towards the goal of 100% sustainable assets, different tools and analyses may be needed for different parts of the Fund's portfolio. We feel that Minimum Standards is a powerful and flexible tool, and can be applied judiciously where more process is needed. Other areas of the portfolio that are less impacted by or impactful on climate change many require a simpler approach.
[23] IPCC Special Report on Global Warming of 1.5 degrees, 2018.
[24] As noted previously, the ambition of the Paris Agreement's Nationally Determined Contributions adds up to a 3-degree world.

with this recommendation.[25] Further investments may be sourced through increasing allocations that already contribute to climate solutions and through new allocations in existing or new investment relationships.

The Panel recommends establishing a new Head of Climate Solutions position to manage the allocation, supported by a well-resourced team. Cognizant of the diversity of strategies in the allocation and the fact that traditional benchmarks are, by nature, backward looking, the Panel recommends the carve-out be managed against an absolute return rather than a benchmark. The absolute return should be set according to the Fund's blended target rate of return net of fees and inflation.

Specifically, the Panel believes:

- The leading edge of climate-related opportunities require deep expertise in climate mitigation and adaptation solutions.
- Superior returns will flow from making decisions based on a robust pipeline of opportunities rather than weighing the occasional sustainable manager against traditional strategies. A dedicated team will have greater capacity to build a robust pipeline of deal flow and vet opportunities against a broader consideration set.
- Capitalizing on the Transition requires more flexibility than traditional investment practices (i.e., backtesting, benchmarks, tracking error, check sizes, fund structures, etc. – see additional recommendations in the next section).

The Panel recognizes and respects a preference among the sustainability community for "integration" of sustainability practices, including ESG factors. In this approach, responsibility for connecting climate change to investment decisions is shared among investment professionals. The climate solutions allocation is not inconsistent with an integrated approach. By dedicating staff and resources through a new allocation, the Panel points to the following benefits:

- The allocation serves as a hedge against the climate risk to which the rest of the Fund remains exposed.
- The allocation better positions the Fund to capitalize on the Transition.
- The allocation's in-house capacity will serve the Fund well in its pursuit of aligning the portfolio to a 2-degree or lower future.
- Over time, the Fund will generate the data it feels is lacking to test "new" strategies (i.e. fill the current data gap for backtesting).
- In order to ramp-up ambition swiftly and move towards sustainable assets, the allocation provides a blueprint for climate solutions on a larger scale.

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[25] The $6B figure is calculated based on the $10B commitment to the "Sustainable Investment Program" Comptroller DiNapoli announced in December 2018, less the $4B invested in the Low Carbon Emissions Index. The Panel sees the "climate solutions" asset class as an allocation for proactive investments in climate mitigation and adaptation. Whereas the low-carbon index is constrained by a nominal tracking error against a traditional benchmark. Note that index products that consider climate risk and decarbonization will be part of the aligned sustainable portfolio. https://www.osc.state.ny.us/press/releases/dec18/120718.htm

Recommendations to Support the Ambition and First Step

On the Fund's Investment Processes

- **Establish and employ Minimum Standards.** Building on the Fund's effort to memorialize climate change-related principles for investment, the Panel recommends the Fund establish criteria for observation and exclusion based on Minimum Standards for investments. These Minimum Standards would serve as the basis on which the Fund decides to buy, hold or sell assets exposed to transition and physical risks. Minimum standards can be used to construct indices, evaluate managers and direct engagement.[26] See Exhibit A for the Panel's suggestions on Minimum Standards and how they have inherent flexibility to allow for dynamic conditions in investments, companies and strategies.
- **Reconsider benchmarks.** The Panel recognizes the centrality of benchmarks in the evaluation of the Fund's overall performance, individual product and asset class performance, and compensation incentives for investment professionals. Yet, traditional market indices reflect historical trends with no accounting for future dislocations as a result of climate change. This mispricing includes physical risks, of which there is certainty, and impacts of the Transition, about which there is a great deal of uncertainty and therefore risk.
    - **Rethink return.** The Panel recommends the Fund consider moving to absolute return instead of market-driven benchmarks that are plagued with the aforementioned challenges in light of climate change. Note that this is our preferred option for the new climate solutions allocation.
    - **Create a new benchmark.** Notwithstanding the dangers of mispricing embedded in traditional market benchmarks, the Panel understands that this is a foundational element for public funds and will take time to change to absolute return. Therefore, in the interim, the Panel recommends that the Fund develop new sustainability benchmarks.
    - **Use "sustainability" benchmarks.** Benchmarks that are consistent with a 2-degree or lower future would support the goal of 100% sustainable assets. These could be used alone or alongside traditional benchmarks when working with managers. Tying climate-wise strategies to short-term and backward-looking benchmarks limits the value of those strategies out of the gate.
- **Develop expertise on climate risk modeling.** Much of the work to date on climate risk has yielded results that a) are not useful enough to inform investment decisions, b) underestimate impacts, c) overestimate timescales or d) all of the above. The Fund should build on its own capabilities and work with partners to develop sophisticated models to measure the climate risk of the Fund's real assets and to undergird risk methodologies

[26] https://www.regjeringen.no/globalassets/upload/fin/statens-pensjonsfond/formelt-grunnlag/guidelines-for-observation-and-exclusion-from-the-gpfg---17.2.2017.pdf

for new index products. The Panel recognizes the state of existing data and reporting remains inadequate and inconsistent and will benefit from owner-led initiatives.[27]

- **Re-audition consultants and managers.** The Panel recommends the Fund conduct a review of its consultants and managers to identify strengths in climate analysis as well as biases and misaligned incentives hamstringing the Transition. To re-fresh its relationships, the Fund should evaluate third-parties to determine the extent of their knowledge and capabilities regarding climate risk and opportunity. As necessary, the Fund should also actively solicit new consultants and managers with particular expertise in climate.
- **Integrate sustainability metrics into compensation structures.** The Panel recommends the Fund further incorporate sustainability goals into the compensation structures of its staff, consultants and managers.
- **Break the soft barriers.** The Panel understands the rationale for minimum check sizes, percent ownership and non-traditional fee structures. In many cases, however, managers and vehicles best poised to capitalize on the Transition will not fit the Fund's conventional manager mold. The Panel recommends the Fund establish new criteria and metrics to evaluate all asset managers on sustainability criteria and for the climate solutions allocation in particular.
- **Review staffing requirements.** The Panel believes the Fund will need more staffing not only to manage the different initiatives in these recommendations, but also to bolster in-house, climate-specific capabilities. The Fund should consider the appropriate level of dedicated staff and other resources needed to maintain and ratchet its leadership in light of the rapidly evolving array of data sources, products, managers and consultants responding to the Transition.

On the Fund's Engagement Processes

The Panel recognizes the Fund's leadership in corporate engagement activities and encourages the Fund to continue its efforts. Accordingly, the Panel recommends the following:

- **Support forward-thinking companies.** The Fund's voice is powerful and the Panel recommends that the Fund seek out forward-thinking companies in which the Fund has a stake in order to support those companies to effect and accelerate positive change across their industries.
- **Engage with consequences.** The Panel encourages the Fund to utilize all active ownership tools available to them up to and including legal action where necessary. However, in light of the urgency needed on the climate issue and in cases where companies continue to resist change, the Panel recommends the Fund establish a glide-path, including active engagement, so that it will no longer own securities in companies that do not meet and are not making progress toward the Minimum Standards. This should be accomplished as soon as the Fund's capabilities allow. To achieve this goal, the Fund will benefit from working in partnership with select index managers and owners.

[27] https://www.gpif.go.jp/en/investment/pdf/ESG_indices_selected.pdf

- **Engage with investment managers.** As soon as the Fund's capabilities allow, the Panel recommends that the Fund find new managers that are able to invest in accord with Minimum Standards and no longer invest in new managers that do not meet Minimum Standards. As well, the Panel recommends that the Fund leverage its capabilities to empower funds it already owns to develop new sustainable strategies. Lastly, the Panel recommends that where existing managers do not meet Minimum Standards, the Fund will no longer increase allocations to these managers and may re-consider the relationship altogether.
- **Collaborate with peers.** The Panel supports the disclosure of the Fund's stewardship activities as a way to communicate its leadership in active ownership leadership activities. We recognize that engagement in concert with like-minded peers can be more effective and serve to educate and learn from others. The Fund is currently participating in Climate Action 100+ and the Panel recommends continuing and expanding these types of engagement initiatives as resources allow.

On the Fund's efforts in Advocacy and Education

The Panel recognizes the Fund's current efforts in advocacy and education and the value these activities serve in support of advancing the field of sustainable investing. The Panel recommends the following enhancements:

- **Educate beneficiaries.** The Panel encourages the Fund to continue and enhance its efforts to educate its beneficiaries about the impact climate change will have on the State of New York and what can be done to adapt to and mitigate those impacts.
- **Advocate for smart climate finance policy.** The Panel encourages the Fund to continue and ratchet-up where possible its advocacy efforts with state, national and international government bodies in support of progressive climate policy, particularly policies that incentivize the investment community. Specifically, for the government of New York State, the Panel encourages the Fund to be proactive in suggesting investment structures for state-related climate initiatives that will allow the Fund to financially support these initiatives.
- **Educate staff.** The panel recommends the Fund ensure staff are actively encouraged to keep up to date on information and best practices around climate-related risks, impacts and the Transition, especially as events are unfolding rapidly in science and across the finance sector.

On the Fund's Investment Products

The Panel recommends the following actions with regard to specific investment products:

- **Develop new best-in-class index products.** The Panel recognizes the Fund's heavy reliance on passive index products. Based on the Panel's belief that traditional index products carry risk that is not adequately priced in light of climate change, the Panel recommends the Fund work with consultants, managers and partners to develop new index products that better account for climate-related risks. These index products may include the following:

  - A low-carbon index that includes a tilt towards companies better poised for the Transition;
  - An index with an active overlay where non-compliant companies can be sold;[28] and
  - An index built on Minimum Standards for climate-related risks.

- **Investigate direct and co-investments capabilities.** Particularly for the new sustainability asset class, and with support of climate-wise advisors, the Fund should consider pursuing direct or coinvestment opportunities in climate infrastructure and real estate.
- **Seed new strategies.** The Fund should consider seeding new managers, including the "fund of one" strategy where the Fund is the only Limited Partner, having architected the strategy and the General Partnership.[29] The Panel also supports consideration of the Danish pension fund model of creating a separately managed climate infrastructure team as a possible avenue to pursue investments in the climate solutions allocation.
- **Develop partnerships for green lending.** The Fund should explore partnerships with the New York State Energy Research and Development Authority (NYSERDA), the Green Bank and other agencies to establish a sustainable lending facility. This partnership would be supported out of the new asset class with the same absolute return benchmark.

[28] For example, the Climate Action 100+ methodology may provide a starting point for such a strategy.
[29] https://www.axios.com/calpers-direct-could-point-the-way-to-more-climate-wise-investments-bbef8fc9-57e5-4d5b-ae87-03c86150888f.html

Exhibit A: Minimum Standards Framework

Establishing robust Minimum Standards based on sound climate science and best-in-class management practices is critical to implementing the Panel's recommendations. Designing those standards, however, is beyond the remit of a group of volunteers, no matter how expert. The Panel thus offers below a possible framework for establishing Minimum Standards.

An effective set of Minimum Standards would be contextualized to match the Fund's investment portfolio and decision-making processes. At best, robust Minimum Standards can serve to overcome many of the principal-agent problems that exist within investing in general and sustainable investing in particular. The examples below are simplified and are provided solely as illustrative of the proposed framework. Details in the examples are not part of the recommendations.

What are Minimum Standards?

- Criteria that define desired behaviors, achievements or position relative to an established and specific standard.
- The criteria may be quantitative, qualitative or a combination of both.
- The criteria would be coupled with definitive actions should the standards not be met according to a defined timeline.
- When specific criteria are not met according to the defined timeline, the types of actions taken would ideally be in the form of direct investing decisions (e.g. buy, sell, hold), but could also be interim steps such as moving to more aggressive active ownership tools.
- Ideally, criteria would be codified through the use of contracts or other documentation and supported through the alignment of compensation and governance structures.
- Examples of criteria include:
    - A high-emission company's rate of decrease in GHG emissions year-on-year.
    - An appropriate corporate governance system for the management of climate-related issues.
    - A climate policy for an investment manager that clearly addresses risks and opportunities from physical impacts and the Transition.
    - A lobbying policy actively supporting government actions to address climate changes.
    - Leveraging an existing framework such as the TCFD Disclosure Recommendations or the Climate Action 100+ strategy.
    - Investment professional compensation structures tied to specific sustainability outcomes or decision-making processes.

- Examples of actions and timelines include:
  - By 2020, exclude all companies that derive more than 10% of revenue from mining thermal coal or account for more than 1% of global production.[30]
  - If less than 5% decrease in GHG emissions year on year after [#] engagements, consider a shareholder resolution.
  - If a manager has no climate policy after engaging for [X] years, consider no new allocations.
  - If a company shows no progress after engaging on all of the selected engagement criteria, mandate that managers remove that security from segregated funds.

How might Minimum Standards be implemented?

Minimum Standards can be set for companies, funds, indices, fund managers and consultants. Given the reliance of the Fund on external managers and passive indices over direct investing, the Panel proposes that the standards be layered as described below.

- Minimum standards should be applied to external managers and general partners. These standards would likely focus on manager processes and capacity (education, staff, resources) to apply a climate lens to their own investment process.
- In order to apply Minimum Standards to companies, the Fund can communicate its expectations around sustainable assets and climate solutions to the managers. The Fund could leverage existing methodologies, such as that of Climate Action 100+, and expand those methodologies over time.
- For index providers, Minimum Standards might be a combination of criteria on the index provider's processes and capacity and serve as a climate lens that acts as an active overlay on an index.

Minimum Standards should consider changing conditions including the Fund's climate ambition, capacity and resources over time.

- Minimum standards should not be static. Criteria and actions should evolve to match the Fund's climate goals as they change over time.
- The Fund can phase-in Minimum Standards to sub-categories according to a priority ranking such as greatest risk, ease of implementation, etc. Sub-categories that could be considered include:
  - Investment products, e.g., indices, segregated funds, comingled funds, bonds;
  - Third-parties, e.g., consultants, external managers, general partners;
  - By asset classes, e.g., private equity, real estate, public equities, fixed income;
  - By sector, e.g., energy, agriculture, transportation;

[30] BNP Paribas Asset Management https://docfinder.bnpparibas-am.com/api/files/1FC9FC6C-0DA8-468E-90B3-016DDB5CD270.