



MainePERS

PUBLIC EMPLOYEES RETIREMENT SYSTEM

Board of Trustees

Public Meeting Packet

July 13, 2023

**MainePERS Board of Trustees
July 13, 2023
139 Capitol Street, Augusta**

AGENDA

9:00 a.m. ¹		CALL TO ORDER		Brian Noyes
9:00 – 9:05 a.m.	1.	<u>CONSIDERATION OF CONSENT CALENDAR</u> <ul style="list-style-type: none">• Minutes of June 8, 2023• Dismissal Order – Yanike-Hale Appeal	ACTION	Brian Noyes
9:05 – 9:10 a.m.	2.	<u>CEO REPORT</u>		Dr. Rebecca M. Wyke
9:10 – 9:15 a.m.	3.	<u>PRIVATE MARKETS REVIEW</u> <ul style="list-style-type: none">• Private Markets Activity		James Bennett James Ackor
9:15 – 9:30 a.m.	4.	<u>INVESTMENT REVIEW</u> <ul style="list-style-type: none">• Management Fee Tracking Update• Investment Monthly Review		James Bennett Brian McDonnell, Cambridge Assocs.
9:30 – 10:30 a.m.	5.	<u>QUARTERLY INVESTMENT EDUCATION</u> <ul style="list-style-type: none">• Energy & the Energy Transition		James Bennett Michael Cembalest, John O’Shea, JP Morgan
10:30 – 10:45 a.m.		<u>BREAK</u>		
10:45 – 11:15 a.m.	6.	<u>ACTUARIAL ASSUMPTIONS REVIEW</u>	ACTION	Dr. Rebecca M. Wyke Kathy Morin Gene Kalwarski, Bonnie Rightnour, Cheiron
11:15 – 11:30 a.m.	7.	<u>PROXY VOTING REVIEW</u>		James Bennett
11:30 – 11:45 a.m.	8.	<u>ENTERPRISE RISK MANAGEMENT</u>		Michael Colleran
11:45 – 11:55 a.m.	9.	<u>LEGISLATIVE UPATE</u>		Kathy Morin
11:55 a.m. – 12:05 p.m.	10.	<u>MEMBER SERVICES, FINANCE, AND OPERATIONS REPORT</u>		Chip Gavin Sherry Vandrell

¹ All times are estimated based upon the anticipated length of each presentation, hearing, discussion, and action. The presiding officer may take agenda items out of order for more efficient or effective conduct of the meeting.

12:05 – 12:20 p.m. 11. PERSONNEL

- **Porting of Employee Service**
- Executive Session pursuant to 1 M.R.S. §405(6)(A) and (D)

ACTION Michael Colleran

ACTION Brian Noyes

Board moves out of executive session.

12:20 p.m.

ADJOURNMENT

Brian Noyes

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

Minutes

Board of Trustees
Board Meeting
June 8, 2023

MainePERS
Augusta
9:00 a.m.

The Board of Trustees met at MainePERS, 139 Capitol Street, Augusta, ME 04332 at 9:00 a.m. on June 8, 2023. Dick Metivier, Vice Chair, presided. Other Trustees participating were: Henry Beck, State Treasurer; John Beliveau; Mark Brunton; John Kimball; and Ken Williams. Joining the Trustees were Dr. Rebecca Wyke, Chief Executive Officer; James Bennett, Chief Investment Officer; Sherry Vandrell, Chief Financial Officer; Chip Gavin, Chief Services Officer; Monica Gorman, Secretary to the Board of Trustees; and Betsy Stivers, Assistant Attorney General and Board Counsel. The Board also was joined for select portions of the meeting by Rebecca Grant, Director of Administration; Kathy Morin, Director of Actuarial and Legislative Affairs; Alex Rand, Retirement Services Business Unit Leader; David Jones, Retirement Services Business Unit Leader; Brian McDonnell, Cambridge Associates; Tom Lynch and George Bumedder, Cliffwater; and William Greenwood, Jennifer Yeung, and Mark White, Albourne.

Dick Metivier called the meeting to order at 9:00 a.m. Henry Beck participated through video remote access pursuant to 1 M.R.S. § 403-B, having been excused from in-person attendance by the Board Chair. All other Trustees were physically present.

CONSIDERATION OF THE CONSENT CALENDAR

The presiding officer called for consideration of the Consent Calendar. The action items on the Consent Calendar were:

- Minutes of May 11, 2023
- Action. Ken Williams made the motion, seconded by John Kimball, to approve the Consent Calendar. Voted unanimously by six Trustees (Beck, Beliveau, Brunton, Kimball, Metivier, and Williams).

CEO REPORT

New Trustee

Dr. Rebecca Wyke stated that the Maine Education Association has elected Nate Burnett to replace Ken Williams as a Trustee. His term will not begin until confirmed in 2024.

Stakeholder Issues

Dr. Rebecca Wyke stated she has received and responded to over sixty emails urging MainePERS to divest from fossil fuels. She also received correspondence from the Director of the Institute for Energy Economics and Financial Analysis urging MainePERS to reduce fossil fuel exposure in public equities.

Member Portal Update

Dr. Rebecca Wyke reported the Phase III testing of the member portal has begun. Several phases are planned prior to the launch in the fall of 2023. Testing includes internal and external stakeholders and a final testing of security and fraud prevention measures.

Member Information Sessions

Dr. Rebecca Wyke stated the Board would be receiving a presentation introducing the recently-developed educational sessions for new and mid-career employees. These sessions were developed for each plan covered by MainePERS. Topics covered include calculation of the benefit, service credit accrual, and eligibility/vesting.

Board Self-Evaluation Survey

Dr. Rebecca Wyke shared with the Trustees that Amy McDuffee will be administering the Board Self-Evaluation Survey between June 19–30, 2023. Amy will share the results with the Board prior to the August meeting and will also have a discussion at that meeting.

Mission Moment

Chip Gavin, David Jones, and Alex Rand provided the Trustees with an overview of the presentation Retirement Services has developed and is offering to new and mid-career members. Members may register for these sessions on-line. Initial feedback has been positive. Chip, David, and Alex answered questions from the Trustees.

PRIVATE MARKETS ACTION

- **Action.** Ken Williams made a motion, seconded by Mark Brunton, to enter into executive session pursuant to 1 M.R.S. §405(6)(F); 5 M.R.S. §17057(4) to discuss private market investment information contained in non-public documents. Voted unanimously by six Trustees (Beck, Beliveau, Brunton, Kimball, Metivier, and Williams).

The Board moved out of executive session.

Long Ridge Equity Partners IV

- **Action.** Mark Brunton made the motion, seconded by John Kimball, that MainePERS make a commitment of up to \$25 million to Long Ridge Equity Partners IV, subject to final due diligence, legal review and negotiations, and authorize the Chief Executive Officer, Chief Investment Officer, and General Counsel as signatories to execute documents in connection with this commitment. Voted unanimously by six Trustees (Beck, Beliveau, Brunton, Kimball, Metivier, and Williams).

CVC Capital Partners IX

- **Action.** Ken Williams made the motion, seconded by Mark Brunton, that MainePERS make a commitment of up to €40 million to CVC Capital Partners IX, subject to final due diligence, legal review and negotiations, and authorize the Chief Executive Officer, Chief Investment Officer, and General Counsel as signatories to execute documents in

connection with this commitment. Voted unanimously by six Trustees (Beck, Beliveau, Brunton, Kimball, Metivier, and Williams).

Stonepeak Opportunities Fund

- **Action.** John Beliveau made the motion, seconded by John Kimball, that MainePERS make a commitment of up to \$50 million to Stonepeak Opportunities Fund, subject to final due diligence, legal review and negotiations, and authorize the Chief Executive Officer, Chief Investment Officer, and General Counsel as signatories to execute documents in connection with this commitment. Voted unanimously by six Trustees (Beck, Beliveau, Brunton, Kimball, Metivier, and Williams).

PRIVATE MARKET REVIEW

Private Markets Activity

Jim Bennett reviewed the table of private market funds and co-investments that had closed during the past 12 months. Jim shared there are no manager meetings scheduled for June.

INVESTMENT REVIEW

Investment Monthly Review

Jim Bennett reported that as of May 31st, the MainePERS fund had a preliminary market value of \$18.3 billion, the preliminary return for the month was -0.5%, and the preliminary calendar year-to-date return was 2.6%.

Liquidity Portfolio

Jim Bennett provided an overview of the liquidity portfolio as of June 8, 2023. Jim reviewed the portfolio and discussed program monitoring, outcomes, exposures, and fees. Jim answered questions from the Trustees.

Investment Peer Comparison

Brian McDonnell shared the asset allocation vs peers report as of March 31, 2023. The Trustees discussed and asked questions about the report.

Henry Beck left the meeting at 10:00 a.m.

MAINESTART QUARTERLY REVIEW

Chip Gavin presented the MaineSTART report for the quarter ending March 31, 2023. Chip shared there are over 1,600 plan participants. He stated removing the Vanguard STAR fund as an option for contributions is nearing its conclusion date of June 30, 2023. Chip answered questions from the Trustees.

MEMBER SERVICES, FINANCE, AND OPERATIONS REPORT

Chip Gavin thanked the Board for their support of Focus Fridays, which have provided the time needed to reduce the current backlogs to less than a month. Chip also shared that the Pension Associate positions are nearly full.

Sherry Vandrell reported the Employer Reporting Unit will be fully staffed within the next couple of weeks. She shared each staff member is trained at all levels in order to perform all tasks needed to support an employer.

Rebecca Grant shared the new Facilities Manager will begin work later in June. She reported the wireless infrastructure is in the process of being upgraded as well as the Manage Engine Service Desk (Help Desk). The IT group is also working on replacing outdated laptops.

LEGISLATIVE UPDATE

Kathy Morin updated the Trustees on the status of legislative bills. Kathy stated that work sessions on various bills are ongoing. Kathy answered questions from the Trustees.

LITIGATION UPDATE

Betsy Stivers reported there is no pending litigation.

PERSONNEL DISCUSSION

- **Action**. John Kimball made a motion, seconded by John Beliveau, to table the delegation item until July. Voted unanimously by five Trustees (Beliveau, Brunton, Kimball, Metivier, and Williams).
- **Action**. Ken Williams made a motion, seconded by Mark Brunton, to enter into executive session pursuant to 1 M.R.S. §405(6)(A) and (D) to discuss compensation of an employee and to discuss labor contracts and negotiations with Maine Service Employees Association. Voted unanimously by five Trustees (Beliveau, Brunton, Kimball, Metivier, and Williams).

The Board moved out of executive session.

Wage Re-Opener Agreements

- **Action**. Ken Williams made a motion, seconded by Mark Brunton, to approve the Administrative, Professional/Technical, and Supervisory wage reopener agreements negotiated by the staff and authorize the Chief Executive Officer, Chief Operating Officer and General Counsel, and Director of Administration as signatories to execute the agreements. Voted unanimously by five Trustees (Beliveau, Brunton, Kimball, Metivier, and Williams).

Appeal # 2022-007

STATE OF MAINE
MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

Rochelle Yanike-Hale,)
Appellant)
)
Appeal of CEO's Decision Denying)
Eligibility for Membership in MainePERS)
)

DISMISSAL ORDER

In a decision dated December 7, 2022, the Chief Executive Officer's Designee (CEOD) found that Rochelle Yanike-Hale was not eligible for membership in MainePERS. Ms. Yanike-Hale filed a timely appeal on that single issue. On May 19, 2023, the CEOD, after remand, issued a decision reversing the earlier decision, and finding that Ms. Yanike-Hale is eligible for membership in the retirement system.

In accordance with the May 19, 2023 decision of the CEOD and the recommendation of the Hearing Officer pursuant to MainePERS Rule Chapter 702§(8)(3)(A)(2), the appeal is hereby dismissed with prejudice.

Board of Trustees
Maine Public Employees Retirement System

By _____
Brian H. Noyes
Chair, Board of Trustees

Dated: _____

Submitted by:


Hearing Officer

Date: June 26, 2023
To: Board of Trustees
From: Dr. Rebecca M. Wyke, CEO
Re: CEO Report

Pension Administration System

In March, MainePERS went out to bid for advisory services to assist in the development of a Request for Proposal (RFP) for the procurement of a new pension administration system. The current system, known as V3 is at end of life and in need of replacement. The new system will serve as the primary line-of-business system for all MainePERS administered retirement plans and associated services and benefits. Three bids were received and the criteria for selection was weighted as follows: services provided 35%; relevant experience 30%; methodology and approach 10%; and cost 25%.

I am pleased to announce that we have awarded the advisory services contract to Linea Solutions, Inc. Founded in 1999, Linea Solutions is a market leader in management and technology consulting services for pension, health and insurance organizations in the U.S. and Canada. Linea will bring a dedicated team of professionals to our project that includes procurement specialists, technical writers, a cybersecurity specialist, and two business analysts with more than 20 years of experience in pension administration. This level of expertise and diversity of experience on the team will help ensure that the RFP is complete, the technical specifications accurate, and the business requirements well documented.

Linea's proposal was especially strong in the categories of services provided and methodology and approach. Their proposal demonstrated a particularly strong focus on the future of the industry and emerging tools, grounded in past practices and standards but not limited by them. Additionally, Linea clearly communicated the importance of data cleansing and migration efforts, as well as consideration for future data acceptance protocols to ensure the integrity of the data.

Retiree Health Insurance Post-Employment Benefits Investment Trust Fund

Last September the members of the Board, as trustees of the Retiree Health Insurance Post-Employment Benefits Investment Trust Fund, authorized the Board Chair to enter into and execute an agreement with the Irrevocable Trust Fund for Other Post-Employment Benefits for Teachers.

The Investment Trust Fund is a trust established in statute to hold and invest funds for the benefit of the Irrevocable Trust Funds for Other Post-Employment Benefits ("Benefit Trusts"), which are separate trusts established to meet the State's unfunded liability obligations for retiree health benefits. The statute names the members of the MainePERS Board of Trustees as the trustees of the Investment Trust Fund. A Benefit Trust was established for retired State employee health benefits in 2007, and initial funding was received in early 2008. The funds are invested in accordance with Board Policy 2.1-B, which adopts an asset allocation similar to that used for the defined benefit funds, except that public market securities are substituted for illiquid private market investments. No disbursement of funds is expected before the year 2027. The Teacher Plan has been established for retired teacher health benefits, and the Investment Trust Fund received initial funding of \$103 million on June 30, 2023.

Enterprise Risk Management (ERM)

Enterprise risk management was identified as an area for greater focus during the Board's self-evaluation last year. At the July Board Meeting, COO and General Counsel Michael Collieran will present an ERM Plan prepared by the senior management team. Additionally, we will propose adding language to Board Policy requiring an annual ERM update to the Board and assigning oversight for this area to the Finance and Audit Committee.

Actuarial Education

Also identified as an area for greater focus during the Board's self-evaluation last year was actuarial education. At the July Board Meeting, Cheiron will join us to conduct a review of the economic assumptions required by Board Policy 2.2. In particular we will revisit the discount rate and inflation rate assumptions included in the valuation of the defined benefit plans. In September, Cheiron will join us again to provide just-in-time education and updates to the actuarial standards of practice leading up to the valuation for the year ended June 30, 2023, which will be presented in October.

MAINEPERS

BOARD OF TRUSTEES INVESTMENTS MEMORANDUM

TO: BOARD MEMBERS
FROM: JAMES BENNETT, CHIEF INVESTMENT OFFICER
SUBJECT: PRIVATE MARKETS ACTIVITY
DATE: JULY 5, 2023

POLICY REFERENCE

[Board Policy 2.1 – Investment Policy Statement](#)

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

1. FUNDS APPROVED BY THE BOARD: CLOSED DURING PAST 12 MONTHS

Below is a list of funds approved by the board during the past 12 months, showing the commitment size approved by the board and the allocation received by MainePERS.

Fund	Board Approval		Commitment	
	Date	Amount	Date	Amount
Angelo Gordon Direct Lending V	7/14/2022	\$ 125,000,000	8/3/2022	\$ 125,000,000
Stonepeak Core Fund	7/14/2022	\$ 100,000,000	8/5/2022	\$ 100,000,000
Sprott Private Resource Lending III	8/11/2022	\$ 30,000,000	8/31/2022	\$ 30,000,000
Hudson Bay Fund	8/11/2022	\$ 100,000,000	9/1/2022	\$ 100,000,000
Farallon Capital Institutional Partners	10/13/2022	\$ 100,000,000	11/7/2022	\$ 100,000,000
GTCR Fund XIV	11/10/2022	\$ 50,000,000	12/16/2022	\$ 50,000,000
SLR Private Corporate Lending Fund II	11/10/2022	\$ 125,000,000	12/23/2022	\$ 125,000,000
Summit Partners Europe Growth Equity Fund IV	2/9/2023	€ 20,000,000	2/10/2023	€ 20,000,000
Ares Capital Europe VI	2/9/2023	€ 75,000,000	3/17/2023	€ 75,000,000
High Street Real Estate VII Venture	2/9/2023	\$ 15,000,000	3/17/2023	\$ 15,000,000
ISAM Vector Master Fund	2/9/2023	\$ 100,000,000	3/31/2023	\$ 100,000,000
Sprott Private Resource Streaming and Royalty	5/11/2023	\$ 40,000,000	5/17/2023	\$ 40,000,000
Redwood Master Fund	5/11/2023	\$ 100,000,000	5/31/2023	\$ 100,000,000
Stonepeak Opportunities Fund	6/8/2023	\$ 50,000,000	6/12/2023	\$ 50,000,000
Long Ridge Equity Partners IV	6/8/2023	\$ 25,000,000	6/26/2023	\$ 15,000,000
CVC Capital Partners IX	6/8/2023	€ 40,000,000	6/29/2023	€ 40,000,000
Rolling 12-Month Total		\$ 1,108,500,000		\$ 1,098,500,000

* ***Bold italic*** indicates a commitment less than the amount approved by the Board.

2. FUNDS APPROVED BY THE BOARD: NOT YET CLOSED

Fund	Board Approval		Commitment	
	Date	Amount	Date	Amount
Ares Senior Direct Lending Fund III	5/11/2023	\$ 100,000,000	TBD	TBD

3. CO-INVESTMENTS CLOSED DURING PAST 12 MONTHS

Below is a list of the co-investments closed by MainePERS during the past 12 months, showing the asset class, associated primary fund commitment, and investment amount. The System participated in five follow-on co-investment upsizings over the trailing twelve months. Within alternative credit, which accounts for three of five upsizings, the total capital committed (original plus follow-on) to each of the co-investments is \$12.5 million or less. Within private equity, which accounts for two of five upsizings, the total capital committed (original plus follow-on) to each of the co-investments is less than \$15 million. In all cases, the total capital committed is less than \$25 million, consistent with the co-investment policy's maximum limit on position size.

Asset Class	Primary Fund Commitment	Co-Investment	Date	Commitment
Alternative Credit	AG Direct Lending Fund III	Participation Agreement #4 (Upsize)	8/9/2022	\$ 2,500,000
Private Equity	Kelso Investment Associates XI	Kelso XI Heights Co-Investment	8/19/2022	\$ 12,000,000
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #1	9/1/2022	\$ 7,500,000
Alternative Credit	Owl Rock Capital Corporation	Participation Agreement #9	9/26/2022	\$ 7,500,000
Private Equity	Summit Growth Equity X	Summit Partners Co-Invest Lions (Upsize)	9/26/2022	\$ 534,070
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #2	10/7/2022	\$ 7,500,000
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #3	10/19/2022	\$ 10,000,000
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #4	10/27/2022	\$ 10,000,000
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #2 (Upsize)	2/6/2023	\$ 5,000,000
Alternative Credit	AG Direct Lending Fund V	Participation Agreement #5	2/27/2023	\$ 10,000,000
Private Equity	Summit Venture Capital V	Summit Partners Co-Invest (CS) (Upsize)	3/2/2023	\$ 1,752,540
Private Equity	Advent GPE X	AI Co-Investment I-A	3/2/2023	\$ 7,500,000
Infrastructure	Stonepeak Infrastructure Fund III	Stonepeak Guardian (Co-Invest) Holdings	4/27/2023	\$ 10,000,000
Alternative Credit	Owl Rock Capital Corporation	Participation Agreement #6 (Upsize)	5/26/2023	\$ 4,153,394
Rolling 12-Month Total				\$ 95,940,004

4. NEW FUNDS UNDER CONSIDERATION

The Investment Team continues to evaluate new fund opportunities. There are no Investment Team meetings with managers scheduled for July.

MAINEPERS

BOARD OF TRUSTEES INVESTMENTS MEMORANDUM

TO: BOARD MEMBERS
FROM: JAMES BENNETT, CHIEF INVESTMENT OFFICER
SUBJECT: MONTHLY INVESTMENT REVIEW
DATE: JULY 5, 2023

Following this memo are two items for discussion at this month's meeting.

POLICY REFERENCE

[Board Policy 2.1 – Investment Policy Statement](#)

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

MANAGEMENT FEE TRACKING UPDATE

The Investment Team has worked with Accounting to create a policy formalizing the process used to track investment management fees. This draft policy follows this memo, and is expected to be adopted later this month following completion of the System's internal review process.

MONTHLY INVESTMENT REVIEW: HIGHLIGHTS AND OBSERVATIONS

Preliminary Fund results for the month include:

- Month-end fund value of \$18.6 billion.
- Monthly return of 1.5%.
- Calendar year-to-date return of 3.9%.

- Fiscal year-to-date return of 3.8%.

Departmental Policy - Investments

4.0 – Investment Management Fee Reporting

Summary of Policy

The System's assets are invested using the services of nearly 90 different investment management firms. The System pays management fees to these managers, and these fees are included in the System's annual financial statements. In addition, management fees are reported to Trustees on a monthly basis and are included in the System's internal interim financial reports.

While fee arrangements are straightforward for public market assets and Risk Diversifiers, fee agreements on private market assets may be complex. Investments is responsible for the tracking of management fees and for providing accurate fee information to Accounting on a timely basis.

For purposes of this policy, an "investment" is defined as an account or an individual investment covered by a fee agreement. For example, the System's US Equity account managed by BlackRock is covered by a fee agreement and is considered an investment, while individual securities held in this account are not. In addition, private market co-investments are considered investments, whether or not management fees are charged.

Statutory/Legal/Board Policy Provisions

- 1 M.R.S. §§ 402, 403, 405, 408-A
- 5 M.R.S. § 17057
- MainePERS Governance Manual, Board Policy 5.6

Impacted Departments

- Investments
- Accounting

Investment Management Fee Reporting – List of Investments

During each fiscal year, the Investment Team builds and maintains a master list of all investments made or held by the System during the year.

This list is created based on the list of investments held at the end of the prior fiscal year, and is updated monthly to reflect new investments, based on month-end custodial system reports.

The Investment Operations Senior Analyst will document changes in the list of System investments, and will provide a monthly report identifying these changes to the CIO and CFO.

Investment Management Fee Reporting – Annual Financial Reports

Subsequent to the end of the fiscal year, Investments will provide Accounting with a file containing the final list of investments held during the fiscal year and management fees paid. Fee amounts will be determined via reference to (i) the System's fee agreement with the manager, (ii) funds called by the partnership for payment of management fees, and (iii) fees reported on partnership financial statements and/or capital account statements

The file provided to Accounting will be accompanied by a narrative that describes the

- number of investments held during current FY
- number of investments with reported management fees
- number of investments with no reported management fees
- total management fees paid during the FY

and provides a comparison to fees during the prior FY.

Investment Management Fee Reporting – Interim Reporting

The final fiscal year fee report becomes the starting point for tracking and projecting fees for the next fiscal year. Specifically:

During September

- The management fee report for the prior FY is finalized in September, after private market financial statements have been received
- Investments will update this report to reflect any new investments closed subsequent to fiscal year end
- Investments will make an initial projection of fees for the current FY, and provide Accounting with a report containing the estimated total management fees for the FY
 - This report will list the number of investments used in the projection, and contain a narrative similar to that described above
 - This estimate will be used by Investments in its monthly reporting to the Board, and by Accounting in interim financial reports

Monthly

- Investments will update the list of investments to reflect any new investments
- Projected management fees on these new investments will be added to the current projection for total FY management fees, and the updated amounts provided to Accounting and used in Board reporting
- A description of changes will be provided to the CIO and CFO

Post 12/31

- Investments will review the projected management fees for each investment, and update as needed, based on calendar year-end financial statements, capital account statements, and asset values
- An updated projection for total FY fees will be produced, and provided to Accounting
- A description of the changes will be provided to the CIO and CFO

Ownership

This Departmental Policy is owned by the Chief Investment Officer.

Adopted July ____, 2023.

James Bennett
Chief Investment Officer



Maine PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Investment Review

July 13, 2023

Investment Objective

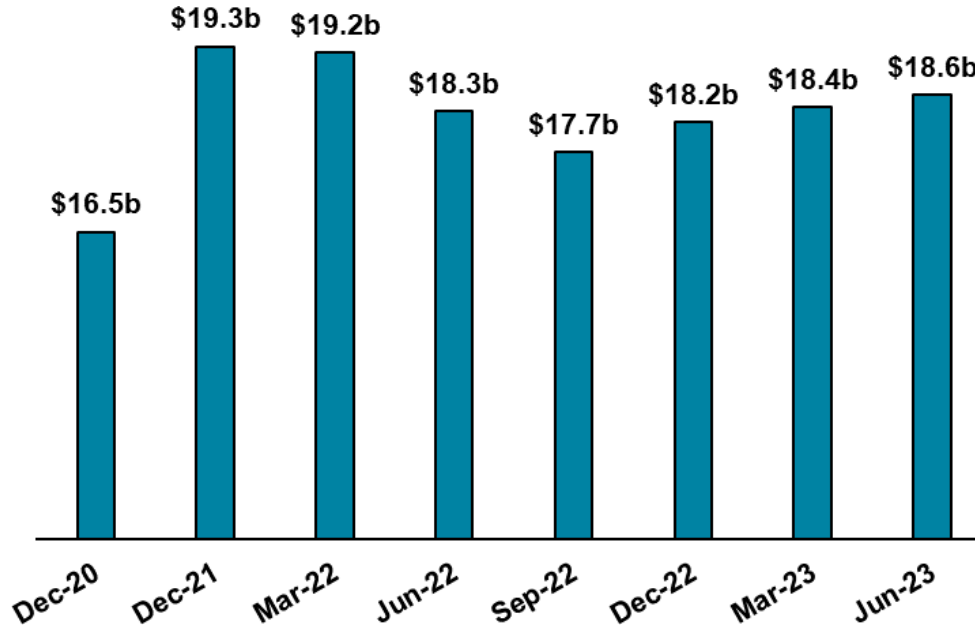
MainePERS' investment objectives balance the System's twin goals of generating investment returns (to ensure growth of the trust funds) and minimizing investment risks (loss of capital and cash flow shortfalls).

The Board recognizes and accepts that these goals are in opposition, and that a trade-off exists between expected risk and return. The Board balances these goals by seeking to optimize portfolio returns consistent with an established targeted portfolio risk level.

Additionally, by optimizing investment returns on trust assets, rather than attempting to maximize them, the Board seeks to maintain contribution rate and funding level volatility at acceptable levels that have been determined from time to time during strategic asset allocation planning and asset/liability reviews.

June 2023 Performance (Preliminary)

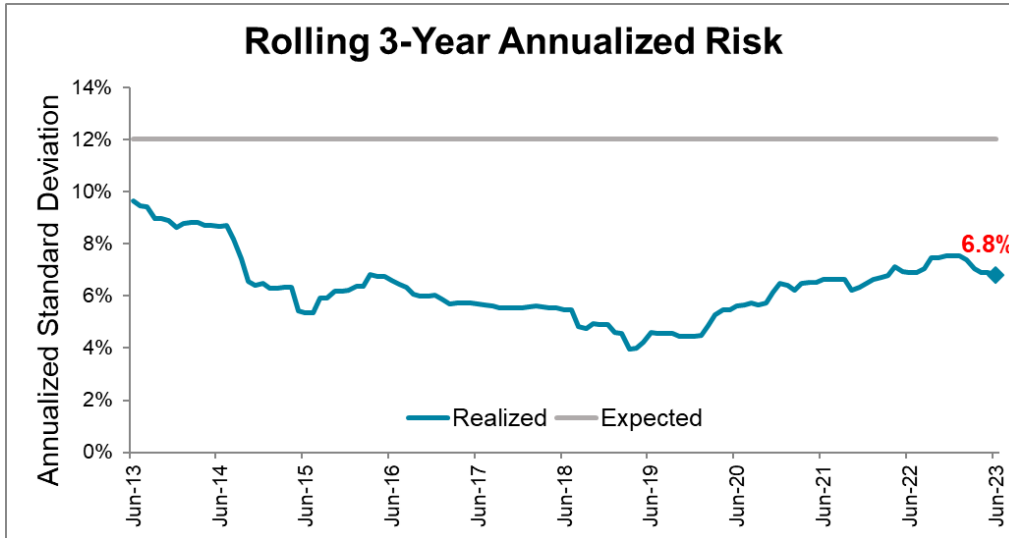
The **preliminary** fund value at the end of June is \$18.6 billion.



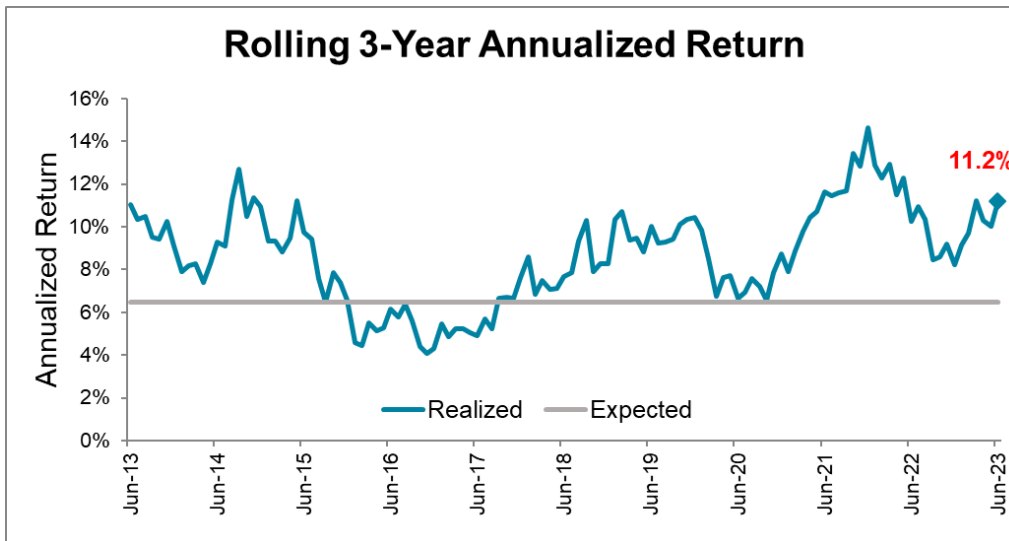
Fund and Benchmark Returns

	Jun-23	CYTD 2023	FYTD 2023
Total Fund	1.5%	3.9%	3.8%
Russell 3000	6.8%	16.2%	19.0%
MSCI ACWI ex-USA	4.5%	9.5%	12.7%
Bloomberg US Aggregate	-0.4%	2.1%	-0.9%

Investment Objective Measurement: Risk and Return



Despite heightened volatility in 2022, observed risk at the Fund level remains below targeted risk on a rolling 3-year annualized basis.



On a rolling 3-year annualized basis, investment returns have exceeded expected values and the System's discount rate.

Note: Rolling 3-year return and standard deviation are calculated at each point in time based on returns over prior 36 months. All figures are annualized.

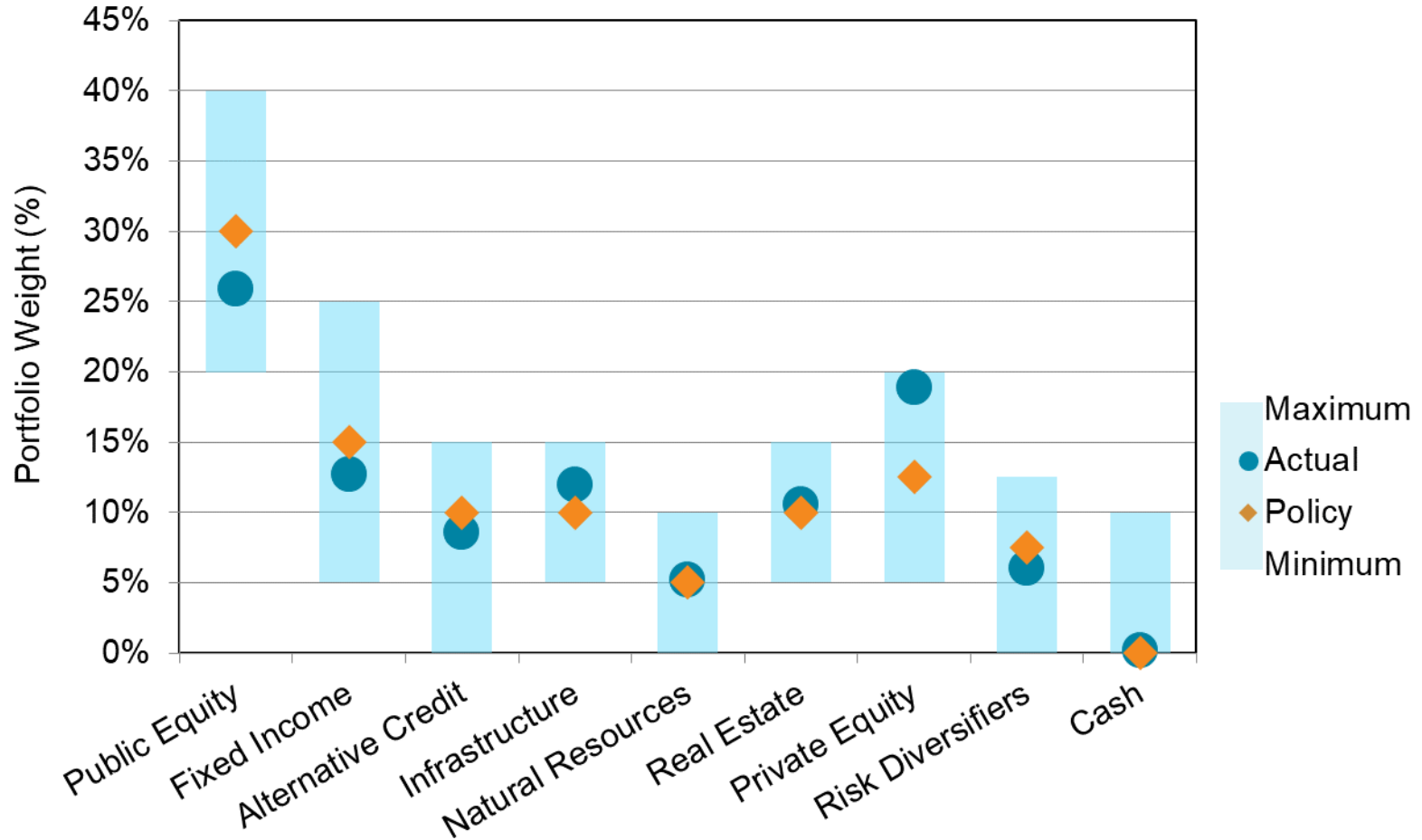
June 2023 Asset Allocation (Preliminary)

Assets (Millions)	Value	% of Fund	Policy %
MainePERS Portfolio	\$ 18,562	100.0%	100.0%
Domestic Equity	\$ 2,961	16.0%	18.5%
International Equity	\$ 1,848	10.0%	11.5%
Fixed Income	\$ 2,351	12.7%	15.0%
Alternative Credit	\$ 1,586	8.5%	10.0%
Infrastructure	\$ 2,228	12.0%	10.0%
Natural Resources	\$ 965	5.2%	5.0%
Private Equity	\$ 3,512	18.9%	12.5%
Real Estate	\$ 1,964	10.6%	10.0%
Risk Diversifiers	\$ 1,118	6.0%	7.5%
Cash	\$ 29	0.2%	0.0%

Portfolio weights for most asset classes remain near MainePERS Investment Policy asset allocation weights.

Private equity remains overweight at ~19% of Fund value, and private markets assets in aggregate comprise 55.2% of the overall portfolio, above the 47.5% policy weight.

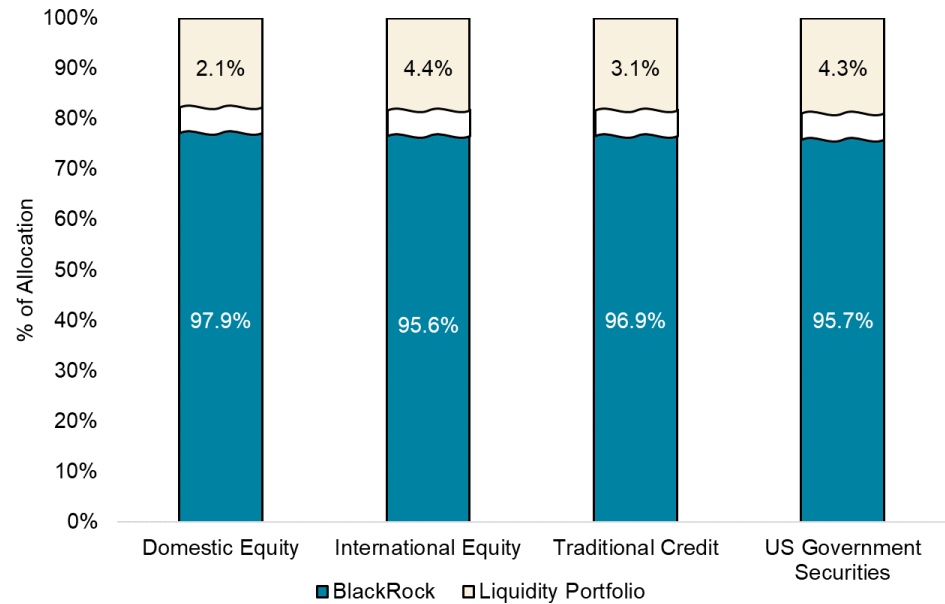
June 2023 Asset Allocation (Preliminary)



Public Securities: Liquidity Portfolio

At the end of June, 1.3% of Fund assets were invested via ETFs and futures contracts in an account managed by Parametric Associates.

The Liquidity Portfolio accounts for 3.3% of MainePERS' total exposure to public securities.



MainePERS Liquidity Portfolio	Market Value (Millions)	Exposure Type
Parametric Domestic Equity	\$62.7	Futures
Parametric International Equity	\$80.4	Futures
Parametric Traditional Credit	\$24.2	ETFs
Parametric US Government Securities	\$67.7	Futures
Total Liquidity Portfolio	\$234.9	

MainePERS has **exposure to derivatives** in the following areas:

- Public Equities, Public Fixed Income, and Risk Diversifiers

MainePERS has **financial leverage** (borrowing and investing) in the following areas:

- BlackRock – Financial leverage in securities lending
- JP Morgan – Financial leverage in securities lending
- Alternative Credit
- Infrastructure
- Natural Resources
- Private Equity
- Real Estate

Investment Related Fees: June 2023

Description	FYTD 23	FY 22	FY 21	FY 20	FY 19
Investment Mgmt. Fees	\$133,626,869	\$130,884,088	\$120,429,567	\$122,567,451	\$111,029,039
Securities Lending Fees ¹	1,179,102	1,744,317	1,653,172	2,239,396	2,226,826
Consulting Fees	1,193,543	1,120,000	1,120,000	1,120,000	1,120,000
Broker Commissions ²	136,039	77,558	52,364	37,461	28,970
Placement Agent Fees	0	0	0	0	0
Total	\$136,135,553	\$133,825,963	\$123,255,103	\$125,964,308	\$114,404,835
Percentage of Fund ³	0.73%	0.73%	0.68%	0.86%	0.77%

1. Securities Lending Fees are through 5/31/2023
2. Actual paid commissions reported by JP Morgan
3. For FY23: Total fees projected for the full fiscal year divided by current Fund value.
For prior FY: Total fees divided by FYE Fund value.

Securities Lending: May 2023

	Average Lendable Assets	Average Assets On Loan	Total Sec Lending Revenue	Revenue Split	MainePERS Net Income	MainePERS Net Income, FYTD
BlackRock						
Fixed Income	\$1,923,729,936	\$1,330,115,683	\$185,791	60%/40%	\$111,475	\$962,001
Total Equity	\$1,697,413,613	\$216,231,602	\$221,102	60%/40%	\$141,203	\$892,216
Total Blackrock	\$3,621,143,549	\$1,546,347,285	\$406,893		\$252,678	\$1,854,217
JP Morgan						
Domestic Equities	\$2,590,190,496	\$123,395,450	\$49,691	85%/15%	\$42,691	\$477,579
Total JP Morgan	\$2,590,190,496	\$123,395,450	\$49,691		\$42,691	\$477,579
Total	\$6,211,334,045	\$1,669,742,735	\$456,584		\$295,369	\$2,331,796
Total Annualized Securities Lending Income, FY 2023:				\$2,543,778 (0.01%, or 1.4 bps)		
Total Actual Securities Lending Income, FY 2022:				\$3,118,726 (0.02%, or 1.7 bps)		

Liquidity Schedule: June 2023

Term	Market Value	Percent of Portfolio
Liquid ¹	\$7,189m	38.7%
Semi-Liquid ²	\$2,455m	13.2%
Illiquid ³	\$8,918m	48.0%
Total	\$18,562m	100.0%

Sources and Uses of Liquidity

	Last 12 Months Actual	Next 12 Months Projection
Private Markets Activity		
Capital Contributions	-\$1,515m	-\$770m
Distributions	\$1,087m	\$1,820m
Net Private Markets Activity	-\$428m	\$1,050m
Benefit Payments	-\$370m	-\$420m
Net Cash Flows	-\$798m	\$630m

¹Liquid assets includes public equities and public fixed income

²Semi-liquid assets includes risk diversifiers, open-end real estate investments, and listed alternative credit funds

³Illiquid assets includes closed-end alternative credit, infrastructure, natural resources, private equity, and real estate funds

MainePERS Alternative Investments Summary

<i>as of 06/30/2023</i>	# of Funds	# of GP Relationships
Alternative Credit	24	13
Infrastructure	35	11
Natural Resources	16	10
Private Equity	124	34
Real Estate	33	18
Risk Diversifiers	11	10
Total*	243	87

*GP Total may not add due to overlapping relationships

Currently, MainePERS is invested in 243 funds,
and has 87 distinct manager relationships.

MainePERS Alternative Investments Summary

<i>(in \$millions)</i> as of 06/30/2023	Current Market Value			Unfunded Commitment	
	Dollars	% of Fund	Policy %*	Dollars	% of Fund
Alternative Credit	\$ 1,586	8.5%	10.0%	\$ 655	3.5%
Infrastructure	\$ 2,228	12.0%	10.0%	\$ 583	3.1%
Natural Resources	\$ 965	5.2%	5.0%	\$ 209	1.1%
Private Equity	\$ 3,512	18.9%	12.5%	\$ 1,059	5.7%
Real Estate	\$ 1,964	10.6%	10.0%	\$ 444	2.4%
Risk Diversifiers	\$ 1,118	6.0%	7.5%	\$ 105	0.6%
Total Alternatives	\$ 11,373	61.3%	55.0%	\$ 3,054	16.5%

For more details please see Private Markets Investment Summary at <http://www.maineper.org/Investments/>

*Investment Policy weights approved by the Board of Trustees effective May 2022

Note: Market values shown above are preliminary estimates. Private market asset values are based on 12/31/2022 values, adjusted for subsequent cash flows.

<i>(in \$millions)</i> as of 06/30/2023	Private Market Commitments by Vintage Year				3-Year
	2020	2021	2022	2023	Average ¹
Alternative Credit	\$ 275	\$ 410	\$ 550	\$ 80	\$ 412
Infrastructure	\$ 235	\$ 180	\$ 200	\$ 50	\$ 205
Natural Resources	\$ -	\$ -	\$ 30	\$ 40	\$ 10
Private Equity	\$ 276	\$ 438	\$ 268	\$ 80	\$ 327
Real Estate	\$ 80	\$ 285	\$ 180	\$ 15	\$ 182
Total Commitments	\$ 866	\$ 1,313	\$ 1,228	\$ 265	\$ 1,136

¹13-Year Average: 2020-2022



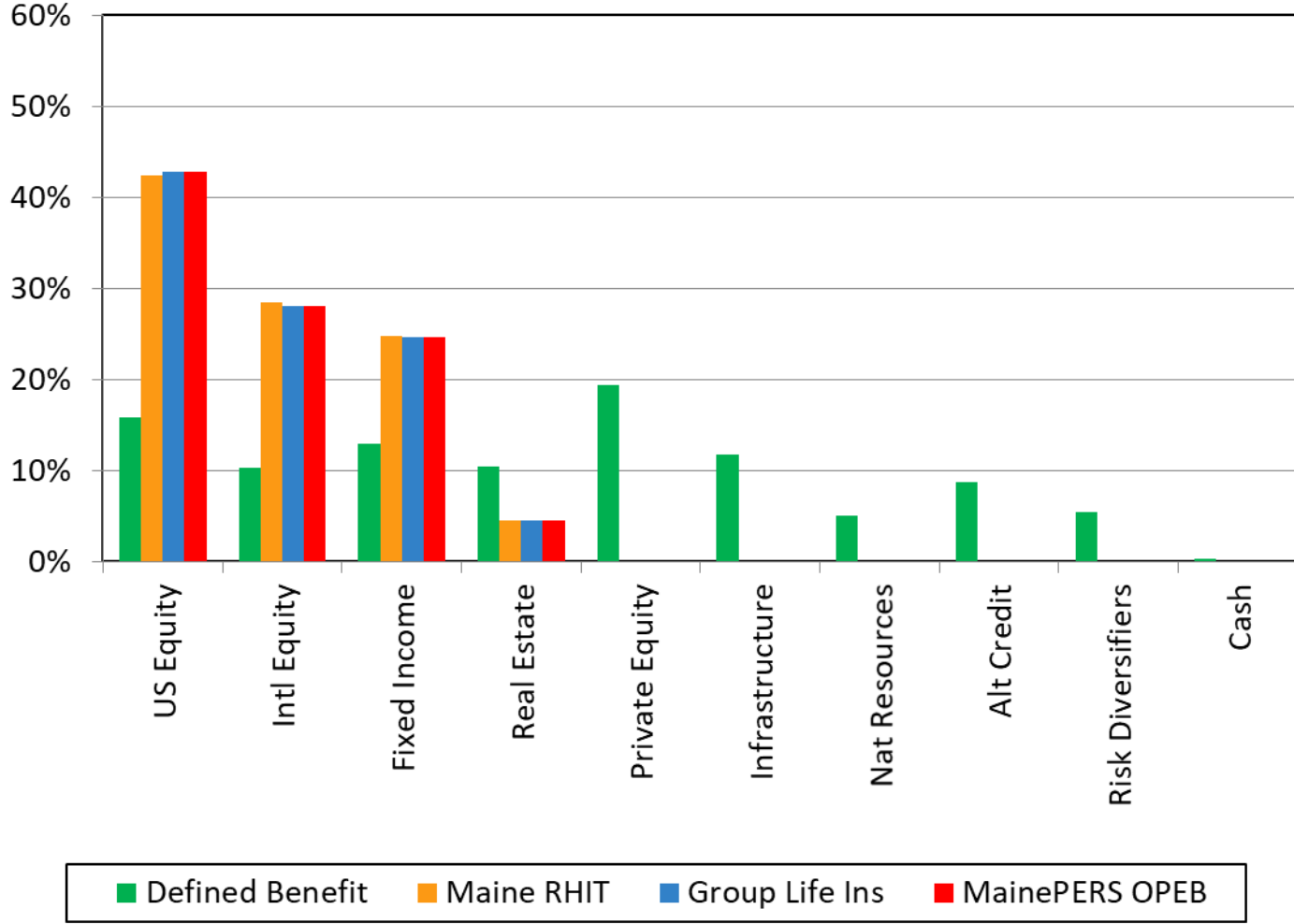
Maine PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Comprehensive Quarterly Reports

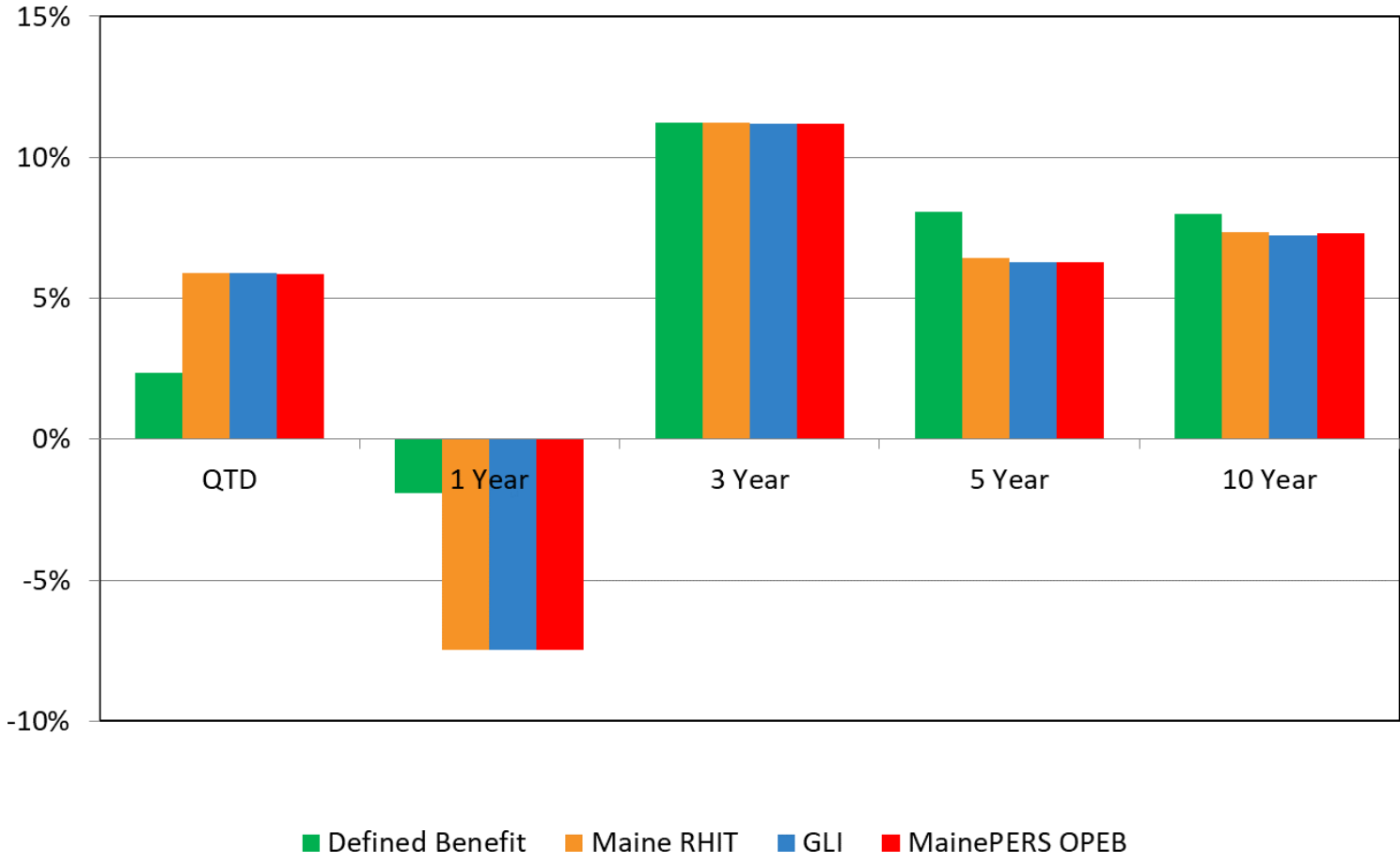
Investment Returns for all Funds at 3/31/2023

Fund	Market Value (millions)	Quarter End	1 Year	3 Year	5 Year	10 Year
Defined Benefit	\$18,378.9	2.3%	-1.9%	11.2%	8.1%	8.0%
Benchmark		4.5%	-2.8%	10.0%	7.5%	7.2%
Maine RHIT	\$353.0	5.9%	-7.5%	11.2%	6.4%	7.3%
Benchmark		5.9%	-7.2%	11.1%	6.3%	7.1%
Group Life Insurance	\$169.9	5.9%	-7.5%	11.2%	6.3%	7.2%
Benchmark		5.9%	-7.2%	11.1%	6.3%	7.1%
MainePERS OPEB	\$17.2	5.9%	-7.5%	11.2%	6.3%	7.3%
Benchmark		5.9%	-7.2%	11.1%	6.3%	7.1%

Asset Allocation for All Funds at 3/31/2023



Performance for All Funds at 3/31/2023

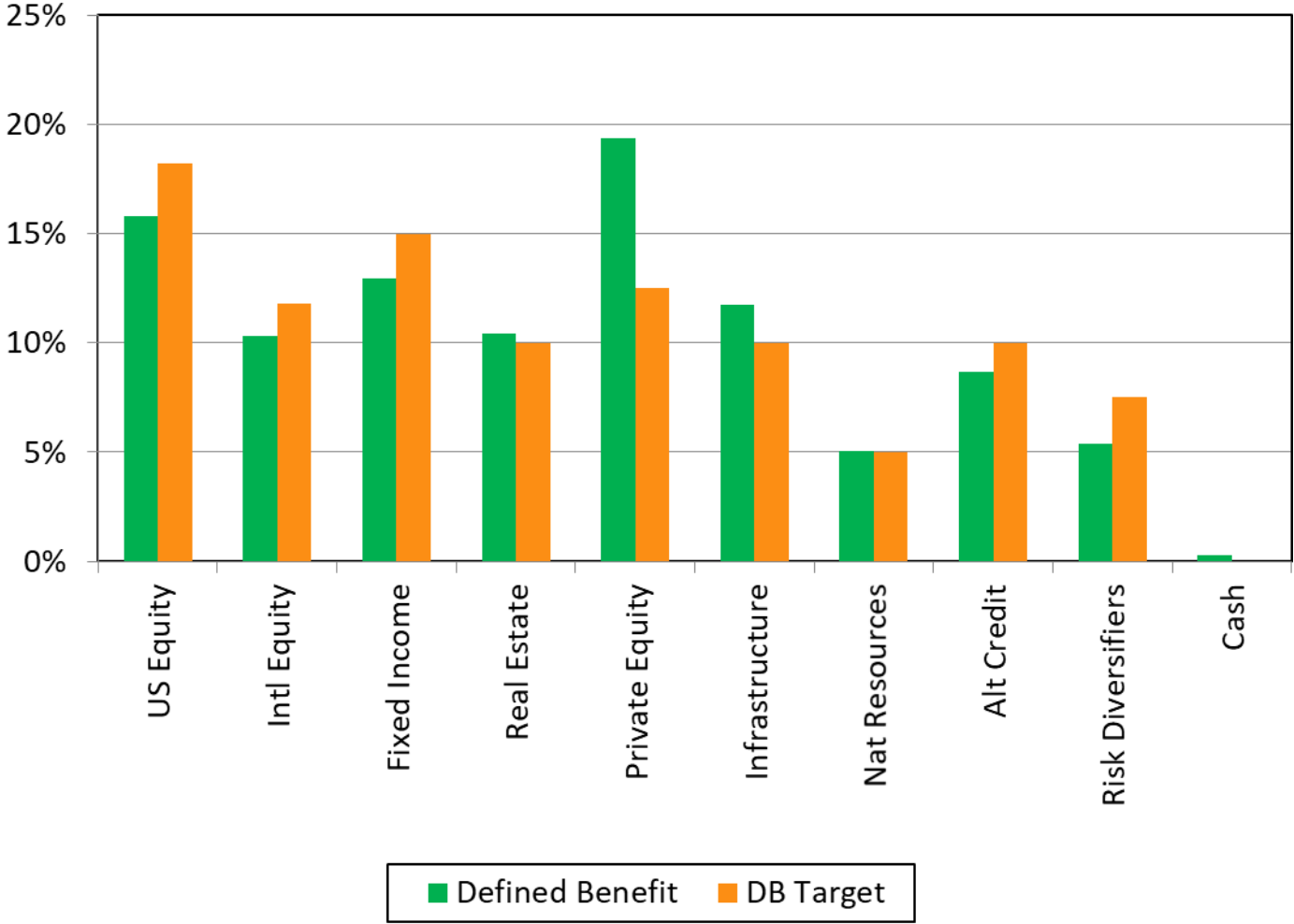




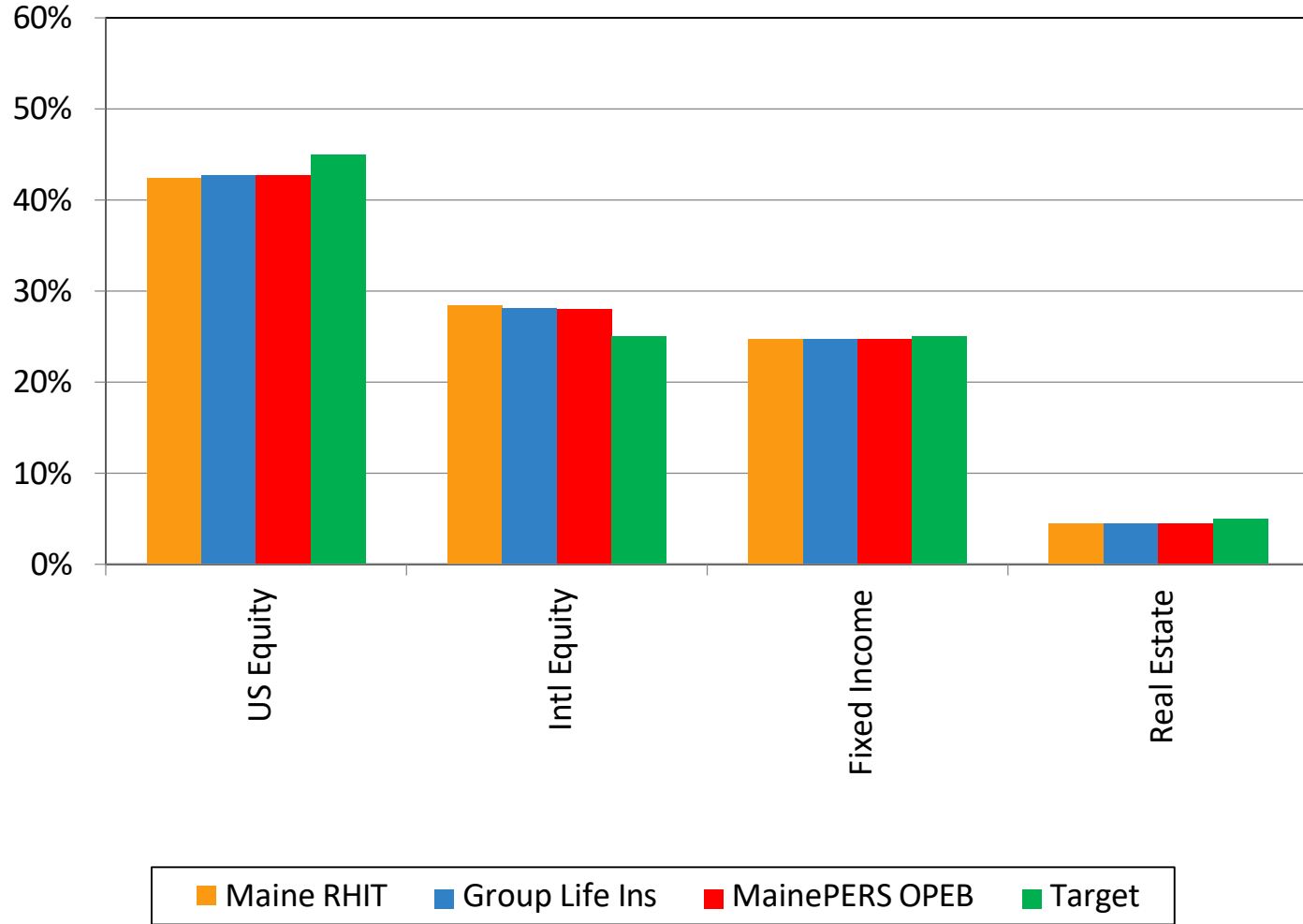
Maine PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Appendix

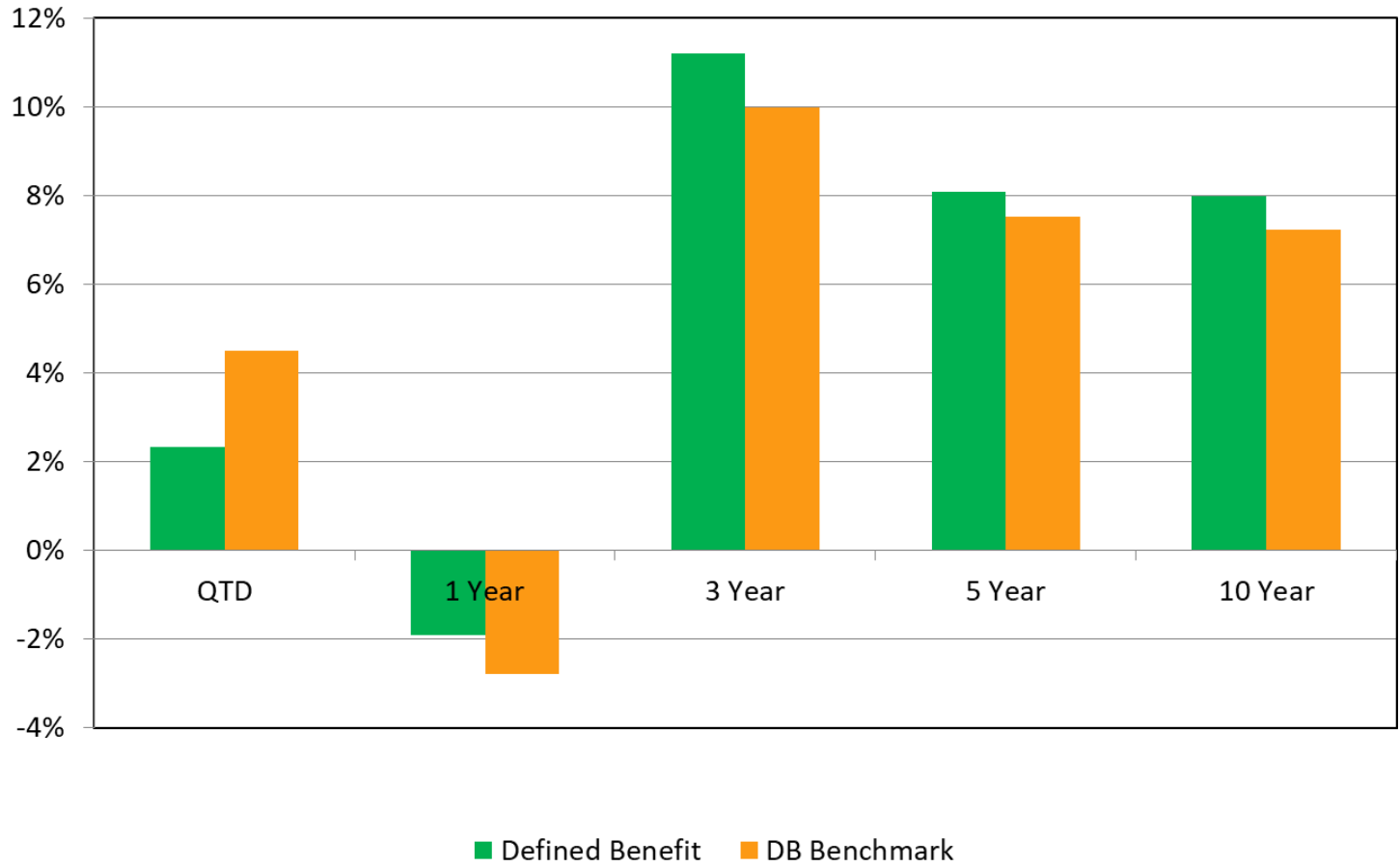
Asset Allocation for Defined Benefit at 3/31/2023



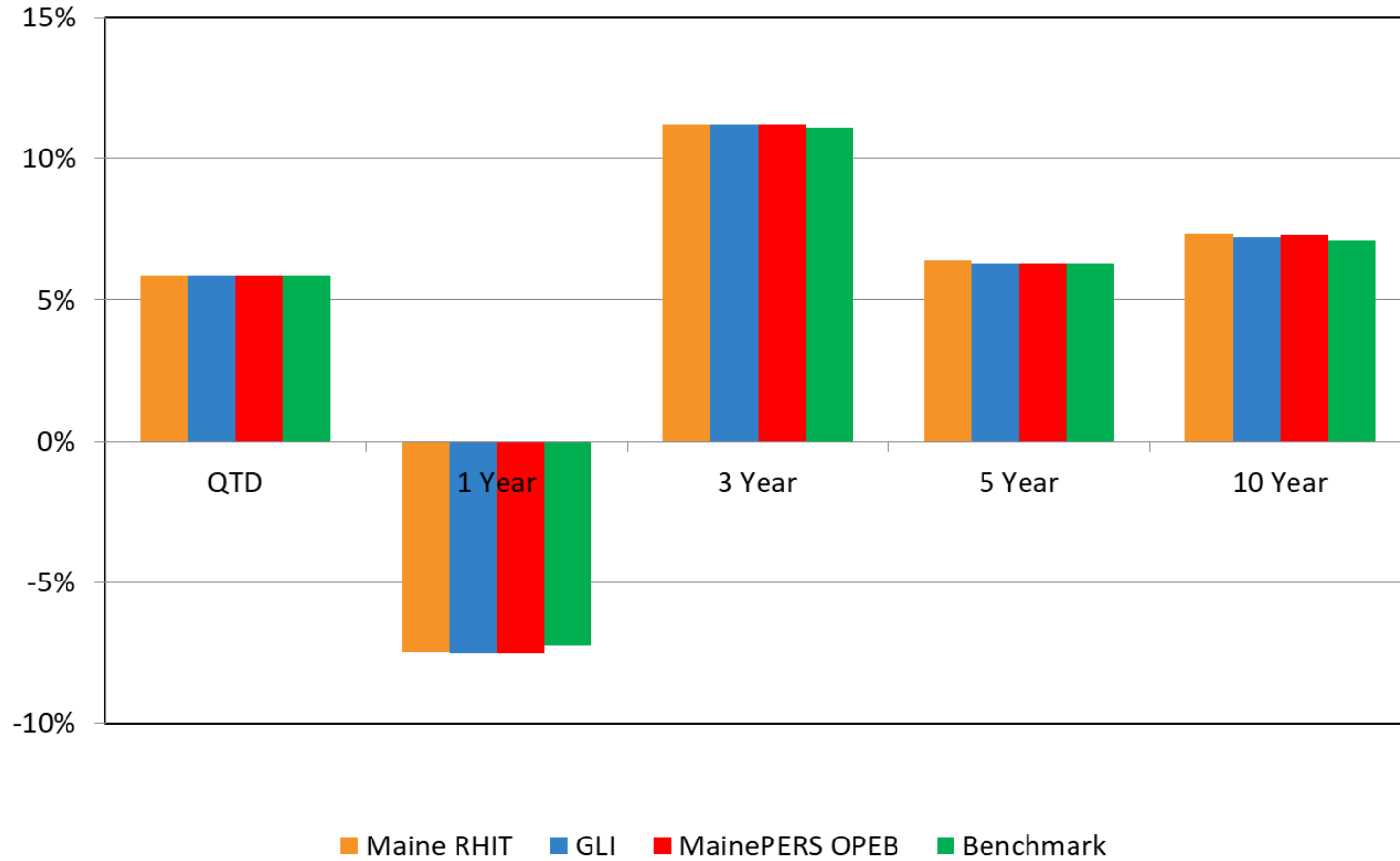
Asset Allocation for RHIPEB, GLI, and OPEB at 3/31/2023



Performance for Defined Benefit at 3/31/2023



Performance for RHIPEB, GLI, and OPEB at 3/31/2023



MainePERS Private Market Investments Summary: 03/31/2023

Asset Class Summary	Commitment (A)	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
Alternative Credit	\$ 2,377,474	\$ 1,822,916	\$ 483,948	\$ 1,499,466	\$ 1,983,414	7.1%
Infrastructure	\$ 3,380,645	\$ 3,391,735	\$ 2,718,400	\$ 2,205,312	\$ 4,923,712	11.5%
Natural Resources	\$ 1,020,500	\$ 1,071,949	\$ 434,442	\$ 961,235	\$ 1,395,677	6.6%
Private Equity	\$ 4,890,769	\$ 4,682,319	\$ 3,946,791	\$ 3,646,334	\$ 7,593,125	16.1%
Real Estate	\$ 2,742,523	\$ 2,608,169	\$ 1,884,318	\$ 1,855,527	\$ 3,739,845	7.1%
Total	\$ 14,411,911	\$ 13,577,088	\$ 9,467,898	\$ 10,167,875	\$ 19,635,773	10.6%

Note: This Asset Class Summary table includes all private market investments: both fund investments and co-investments.

Co-Investment Summary	Commitment (A)	# of Co- Investments	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
Alternative Credit Co-Investments	\$ 243,700	35	\$ 244,110	\$ 75,777	\$ 199,022	\$ 274,799	8.8%
Infrastructure Co-Investments	\$ 208,828	10	\$ 204,942	\$ 248,647	\$ 122,480	\$ 371,127	14.8%
Natural Resources Co-Investments	\$ 32,500	2	\$ 31,155	-	\$ 48,031	\$ 48,031	12.5%
Private Equity Co-Investments	\$ 377,777	32	\$ 364,933	\$ 310,156	\$ 257,288	\$ 567,444	14.0%
Real Estate Co-Investments	\$ 66,951	5	\$ 58,551	\$ 5,898	\$ 45,665	\$ 51,563	-5.0%
Total	\$ 929,756	84	\$ 903,691	\$ 640,479	\$ 672,486	\$ 1,312,965	13.1%

Note: This table contains values for the co-investment portion of the private market portfolio.

MainePERS Private Market Investments Summary: 03/31/2023

Alternative Credit

Fund Name	Commitment (A)	Date of Commitment	Amount	Total	Current Market	Total Value (C+D)	Interim Net IRR
			Contributed (B)	Distributions (C)	Value (D)		
Angelo Gordon Direct Lending Fund II	\$ 25,000	3/31/2020	\$ 23,749	\$ 20,605	\$ 12,370	\$ 32,975	19.0%
Angelo Gordon Direct Lending Fund III	\$ 100,000	7/20/2018	\$ 101,649	\$ 66,896	\$ 70,704	\$ 137,601	10.7%
Participation Agreement #1	\$ 7,500	10/11/2019	\$ 7,484	\$ 2,054	\$ 7,045	\$ 9,099	8.1%
Participation Agreement #2	\$ 5,000	10/11/2019	\$ 4,994	\$ 5,422	\$ -	\$ 5,422	8.8%
Participation Agreement #3	\$ 5,000	10/11/2019	\$ 5,000	\$ 5,700	\$ -	\$ 5,700	7.3%
Participation Agreement #4	\$ 10,000	10/18/2019	\$ 9,915	\$ 2,082	\$ 9,591	\$ 11,674	8.3%
Participation Agreement #5	\$ 5,000	12/6/2019	\$ 5,000	\$ 2,213	\$ 4,147	\$ 6,360	9.3%
Participation Agreement #6	\$ 10,000	12/6/2019	\$ 9,991	\$ 1,940	\$ 9,768	\$ 11,708	8.7%
Participation Agreement #7	\$ 5,000	12/11/2019	\$ 5,000	\$ 1,573	\$ 4,730	\$ 6,302	8.3%
Participation Agreement #8	\$ 5,000	8/13/2020	\$ 4,914	\$ 1,153	\$ 4,827	\$ 5,980	8.5%
Participation Agreement #9	\$ 7,500	4/9/2021	\$ 7,425	\$ 1,241	\$ 7,347	\$ 8,588	NM
Participation Agreement #10	\$ 5,000	4/20/2021	\$ 5,007	\$ 1,235	\$ 4,557	\$ 5,791	NM
Participation Agreement #11	\$ 5,000	5/5/2021	\$ 5,000	\$ 855	\$ 4,743	\$ 5,598	NM
Angelo Gordon Direct Lending Fund IV	\$ 100,000	1/24/2020	\$ 90,000	\$ 10,288	\$ 99,758	\$ 110,046	12.3%
Participation Agreement #1	\$ 5,000	10/23/2020	\$ 4,913	\$ 1,421	\$ 4,380	\$ 5,801	8.2%
Participation Agreement #2	\$ 12,500	8/17/2021	\$ 12,295	\$ 1,462	\$ 12,261	\$ 13,723	NM
Participation Agreement #3	\$ 7,500	10/5/2021	\$ 7,500	\$ 7,913	\$ -	\$ 7,913	NM
Participation Agreement #4	\$ 5,000	12/21/2021	\$ 4,925	\$ 599	\$ 4,888	\$ 5,487	NM
Participation Agreement #5	\$ 5,000	12/21/2021	\$ 4,925	\$ 762	\$ 4,705	\$ 5,467	NM
Participation Agreement #6	\$ 5,000	1/12/2022	\$ 4,925	\$ 591	\$ 4,878	\$ 5,469	NM
Participation Agreement #7	\$ 7,500	1/12/2022	\$ 7,388	\$ 663	\$ 7,297	\$ 7,960	NM
Participation Agreement #8	\$ 12,500	6/16/2022	\$ 12,406	\$ 1,038	\$ 12,276	\$ 13,313	NM
Angelo Gordon Direct Lending Fund IV Annex	\$ 50,000	11/18/2021	\$ 47,500	\$ 2,198	\$ 49,767	\$ 51,965	NM
Angelo Gordon Direct Lending Fund V	\$ 125,000	8/3/2022	\$ 53,125	\$ -	\$ 57,195	\$ 57,195	NM
Participation Agreement #1	\$ 7,500	9/1/2022	\$ 7,388	\$ 456	\$ 7,339	\$ 7,796	NM
Participation Agreement #2	\$ 12,500	10/7/2022	\$ 12,263	\$ 275	\$ 12,297	\$ 12,572	NM
Participation Agreement #3	\$ 10,000	10/19/2022	\$ 9,850	\$ 518	\$ 9,787	\$ 10,305	NM
Participation Agreement #4	\$ 10,000	10/27/2022	\$ 9,800	\$ 499	\$ 9,733	\$ 10,232	NM
Participation Agreement #5	\$ 10,000	2/27/2023	\$ 9,821	\$ 125	\$ 9,800	\$ 9,925	NM
Ares Capital Europe IV	\$ 122,000	4/30/2018	\$ 96,890	\$ 23,187	\$ 88,538	\$ 111,724	4.7%
Ares Capital Europe V	\$ 122,000	9/4/2020	\$ 89,007	\$ 3,430	\$ 91,610	\$ 95,041	6.8%
Ares Capital Europe VI	\$ 82,500	3/17/2023	\$ -	\$ -	\$ -	\$ -	NM
Ares Senior Direct Lending Fund II	\$ 100,000	12/10/2021	\$ 45,930	\$ 3,921	\$ 46,315	\$ 50,236	NM
Audax Senior Debt (MP), LLC	\$ 100,000	6/30/2017	\$ 100,000	\$ 20,800	\$ 107,363	\$ 128,163	4.8%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Alternative Credit

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
Brookfield Infrastructure Debt Fund III	\$ 100,000	7/15/2022	\$ 33,938	\$ 4,045	\$ 30,275	\$ 34,319	NM
Comvest Credit Partners VI	\$ 125,000	5/20/2022	\$ 50,000	\$ -	\$ 51,106	\$ 51,106	NM
Deerpath Capital VI	\$ 75,000	9/30/2021	\$ 54,590	\$ 4,527	\$ 55,583	\$ 60,110	NM
Global Infrastructure Partners Spectrum	\$ 100,000	2/20/2019	\$ 72,619	\$ 27,581	\$ 50,762	\$ 78,343	7.3%
Mesa West Core Lending Fund	\$ 100,000	6/18/2013	\$ 125,399	\$ 59,841	\$ 115,726	\$ 175,567	5.7%
Owl Rock Capital Corporation	\$ 100,000	3/10/2017	\$ 116,571	\$ 47,065	\$ 97,115	\$ 144,180	5.8%
Participation Agreement #1	\$ 5,000	5/7/2018	\$ 4,851	\$ 5,499	\$ -	\$ 5,499	12.7%
Participation Agreement #2	\$ 6,185	7/31/2018	\$ 6,196	\$ 7,745	\$ -	\$ 7,745	9.9%
Participation Agreement #3	\$ 5,000	8/7/2018	\$ 4,938	\$ 5,634	\$ -	\$ 5,634	7.9%
Participation Agreement #4	\$ 5,000	8/20/2018	\$ 4,566	\$ 5,835	\$ -	\$ 5,835	8.1%
Participation Agreement #5	\$ 5,000	12/21/2018	\$ 4,826	\$ 1,714	\$ 4,476	\$ 6,191	7.1%
Participation Agreement #6	\$ 7,500	8/7/2020	\$ 8,905	\$ 3,280	\$ 7,316	\$ 10,596	9.2%
Participation Agreement #7	\$ 7,500	7/26/2021	\$ 6,560	\$ 1,026	\$ 6,452	\$ 7,478	NM
Participation Agreement #8	\$ 12,500	6/17/2022	\$ 12,778	\$ 1,171	\$ 12,415	\$ 13,586	NM
Participation Agreement #9	\$ 7,500	9/26/2022	\$ 7,388	\$ 450	\$ 7,369	\$ 7,819	NM
Owl Rock Capital Corporation III	\$ 100,000	6/19/2020	\$ 114,983	\$ 14,983	\$ 117,916	\$ 132,899	9.5%
Pathlight Capital Fund II	\$ 75,000	4/22/2021	\$ 104,980	\$ 49,120	\$ 64,117	\$ 113,238	NM
Participation Agreement #1	\$ 7,500	4/1/2022	\$ 7,368	\$ 1,106	\$ 7,001	\$ 8,107	NM
Participation Agreement #2	\$ 7,500	4/1/2022	\$ 7,429	\$ 653	\$ 7,397	\$ 8,050	NM
Pathlight Capital Fund III*	\$ 75,000	6/24/2022	\$ 40,736	\$ 8,438	\$ 21,175	\$ 29,614	NM
Solar Capital Private Corporate Lending Fund	\$ 50,000	6/26/2019	\$ 40,188	\$ 5,718	\$ 41,860	\$ 47,578	11.4%
Solar Capital Debt Fund	\$ 50,000	6/26/2019	\$ 25,000	\$ 1,395	\$ 26,385	\$ 27,780	12.2%
SLR Private Corporate Lending Fund II	\$ 125,000	12/23/2022	\$ -	\$ -	\$ -	\$ -	NM
Silver Point Specialty Credit II	\$ 50,000	1/31/2020	\$ 57,821	\$ 24,957	\$ 39,554	\$ 64,511	9.6%
Tennenbaum Direct Lending VIII	\$ 100,000	11/30/2017	\$ 100,883	\$ 80,962	\$ 41,529	\$ 122,490	6.2%

MainePERS Private Market Investments Summary: 03/31/2023

Infrastructure

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
Alinda Infrastructure Fund II	\$ 50,000	9/17/2009	\$ 68,297	\$ 74,099	\$ 216	\$ 74,315	1.9%
ArLight Energy V	\$ 75,000	10/28/2011	\$ 76,031	\$ 103,624	\$ -	\$ 103,624	8.0%
Shore Co-Investment Holdings II	\$ 20,000	1/30/2014	\$ 17,709	\$ 19,737	\$ -	\$ 19,737	8.4%
ArLight Energy VI	\$ 150,000	11/25/2014	\$ 159,687	\$ 127,354	\$ 61,914	\$ 189,269	4.2%
Great River Hydro Partners*	\$ 12,000	6/17/2017	\$ 10,718	\$ 44,535	\$ 36,079	\$ 80,614	40.2%
Brookfield Infrastructure Fund II	\$ 100,000	6/28/2013	\$ 116,690	\$ 103,388	\$ 90,532	\$ 193,920	9.7%
Brookfield Infrastructure Fund III	\$ 100,000	4/15/2016	\$ 108,389	\$ 52,139	\$ 106,343	\$ 158,482	12.0%
Co-Investment #1	\$ 20,000	3/31/2017	\$ 15,947	\$ 19,216	\$ 18,201	\$ 37,418	28.1%
Carlyle Global Infrastructure Opportunity Fund	\$ 100,000	5/1/2019	\$ 85,007	\$ 16,111	\$ 83,893	\$ 100,004	11.1%
Carlyle Infrastructure Partners	\$ 50,000	11/2/2007	\$ 57,366	\$ 64,289	\$ 370	\$ 64,659	2.5%
Carlyle Power Partners II	\$ 50,000	11/19/2015	\$ 62,562	\$ 31,374	\$ 57,493	\$ 88,867	10.7%
Cube Infrastructure*	\$ 45,000	4/16/2010	\$ 60,063	\$ 96,665	\$ 422	\$ 97,087	8.0%
Cube Infrastructure II	\$ 90,000	9/11/2018	\$ 73,467	\$ 5,744	\$ 67,110	\$ 72,854	-0.3%
Cube Infrastructure III	\$ 90,000	8/16/2021	\$ 40,821	\$ -	\$ 40,451	\$ 40,451	NM
EQT Infrastructure III	\$ 68,000	12/3/2016	\$ 97,262	\$ 129,417	\$ 42,038	\$ 171,455	20.8%
EQT Infrastructure IV	\$ 100,000	12/17/2018	\$ 93,463	\$ 17,140	\$ 103,126	\$ 120,266	11.3%
EQT Infrastructure V	\$ 75,000	12/8/2020	\$ 54,818	\$ 6,451	\$ 52,429	\$ 58,880	8.1%
First Reserve Energy Infrastructure Fund	\$ 50,000	6/30/2010	\$ 59,778	\$ 52,172	\$ 4,822	\$ 56,994	-1.3%
First Reserve Energy Infrastructure Fund II	\$ 100,000	10/21/2013	\$ 127,939	\$ 127,177	\$ 33,451	\$ 160,628	13.9%
Global Infrastructure Partners Sonic	\$ 30,000	7/31/2020	\$ 32,521	\$ -	\$ 20,769	\$ 20,769	-16.4%
Global Infrastructure Partners	\$ 75,000	3/31/2008	\$ 101,173	\$ 205,062	\$ 718	\$ 205,780	17.2%
Global Infrastructure Partners II	\$ 75,000	12/3/2011	\$ 104,944	\$ 143,984	\$ 37,810	\$ 181,793	15.9%
Global Infrastructure Partners III	\$ 150,000	4/15/2016	\$ 183,878	\$ 103,211	\$ 155,781	\$ 258,991	10.6%
Co-Investment #1	\$ 29,000	2/28/2017	\$ 27,677	\$ 16,251	\$ 36,248	\$ 52,499	14.9%
Co-Investment #2	\$ 25,000	8/16/2018	\$ 26,816	\$ 2,888	\$ 18,782	\$ 21,671	-5.1%
Global Infrastructure Partners IV	\$ 150,000	12/21/2018	\$ 129,010	\$ 12,845	\$ 122,312	\$ 135,158	4.4%
IFM Global Infrastructure (US), L.P.	\$ 100,000	12/20/2012	\$ 144,550	\$ 208,040	\$ -	\$ 208,040	9.8%
KKR Diversified Core Infrastructure Fund	\$ 100,000	4/29/2022	\$ 100,000	\$ -	\$ -	\$ -	NM
KKR Global Infrastructure Investors	\$ 75,000	9/29/2010	\$ 87,917	\$ 154,328	\$ 89	\$ 154,418	13.1%
KKR Global Infrastructure Investors II	\$ 150,000	10/24/2014	\$ 184,651	\$ 241,656	\$ 77,385	\$ 319,041	17.2%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Infrastructure

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
KKR Atlanta Co-Invest	\$ 24,000	9/26/2014	\$ 21,428	\$ 28,551	\$ -	\$ 28,551	5.7%
KKR Taurus Co-Invest II	\$ 25,000	8/15/2017	\$ 25,000	\$ 56,779	\$ 818	\$ 57,597	21.4%
KKR Byzantium Infrastructure Aggregator	\$ 15,000	10/17/2017	\$ 15,000	\$ 7,013	\$ 10,912	\$ 17,925	4.7%
KKR Global Infrastructure Investors III	\$ 100,000	3/29/2018	\$ 89,817	\$ 22,722	\$ 87,693	\$ 110,414	10.2%
Meridiam Infrastructure (SCA)	\$ 11,000	9/23/2015	\$ 21,938	\$ 10,415	\$ 26,063	\$ 36,478	8.4%
Meridiam Infrastructure (SCA) B Shares	\$ 1,000	9/23/2015	\$ 305	\$ 55	\$ 23,913	\$ 23,968	80.2%
Meridiam Infrastructure Europe II (SCA)	\$ 22,500	9/23/2015	\$ 27,420	\$ 15,590	\$ 36,181	\$ 51,770	12.0%
Meridiam Infrastructure Europe III SLP	\$ 95,000	4/27/2016	\$ 69,465	\$ 16,804	\$ 56,727	\$ 73,531	2.1%
Meridiam Sustainable Infrastructure Europe IV	\$ 90,000	4/16/2021	\$ 12,422	\$ 4	\$ 10,573	\$ 10,576	NM
Meridiam Infrastructure N.A. II	\$ 75,000	9/28/2012	\$ 88,232	\$ 31,084	\$ 175,999	\$ 207,082	17.2%
MINA II CIP	\$ 175	6/30/2015	\$ 169	\$ 29	\$ 19,773	\$ 19,802	118.9%
Meridiam Infrastructure N.A. II	\$ 20,000	6/30/2015	\$ 18,870	\$ 4,342	\$ 45,092	\$ 49,434	23.8%
Meridiam Infrastructure N.A. III	\$ 50,000	7/12/2017	\$ 30,987	\$ 1	\$ 37,823	\$ 37,823	16.7%
Stonepeak Infrastructure Partners II	\$ 140,000	11/12/2015	\$ 188,950	\$ 231,036	\$ 40,937	\$ 271,973	13.4%
Stonepeak Claremont Co-Invest*	\$ 25,000	5/30/2017	\$ 25,000	\$ 51,959	\$ 23	\$ 51,982	17.8%
Stonepeak Spear (Co-Invest) Holdings	\$ 25,000	1/8/2018	\$ 19,648	\$ 1,717	\$ 37,333	\$ 39,051	14.8%
Stonepeak Infrastructure Partners III	\$ 150,000	10/13/2017	\$ 162,617	\$ 51,776	\$ 193,534	\$ 245,311	17.3%
Stonepeak Infrastructure Partners IV	\$ 125,000	5/8/2020	\$ 65,141	\$ 9,568	\$ 60,301	\$ 69,869	8.2%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Natural Resources

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
ACM Permanent Crops	\$ 35,000	10/24/2014	\$ 39,100	\$ 10,375	\$ 60,692	\$ 71,067	9.8%
ACM Permanent Crops II	\$ 35,000	5/12/2016	\$ 41,556	\$ 8,885	\$ 20,054	\$ 28,939	-10.7%
AMERRA Agri Fund III	\$ 50,000	2/11/2016	\$ 98,634	\$ 77,009	\$ 26,052	\$ 103,061	1.8%
Denham Mining Fund	\$ 35,000	6/29/2018	\$ 30,031	\$ 659	\$ 38,257	\$ 38,916	9.9%
Homestead Capital Farmland II	\$ 50,000	8/8/2016	\$ 54,683	\$ 10,029	\$ 55,678	\$ 65,707	5.1%
Homestead Capital Farmland III	\$ 30,000	10/26/2018	\$ 26,148	\$ 2,326	\$ 26,195	\$ 28,521	6.3%
Orion Mine Finance Fund II	\$ 50,000	5/25/2016	\$ 101,653	\$ 75,965	\$ 50,289	\$ 126,254	9.8%
Orion Mine Finance Co-Fund II	\$ 20,000	8/13/2018	\$ 20,098	\$ -	\$ 34,085	\$ 34,085	12.6%
Silver Creek Aggregate Reserves Fund	\$ 100,000	11/6/2018	\$ 15,296	\$ 2,378	\$ 18,053	\$ 20,431	NM
Sprott Private Resource Lending Fund III	\$ 30,000	8/31/2022	\$ 2,453	\$ 1	\$ 2,153	\$ 2,153	NM
Taurus Mining Fund	\$ 50,000	3/27/2015	\$ 41,459	\$ 46,116	\$ 4,060	\$ 50,176	7.6%
Taurus Mining Fund Annex	\$ 23,000	12/1/2016	\$ 18,366	\$ 23,384	\$ 938	\$ 24,322	17.9%
Taurus Mining Fund No. 2	\$ 75,000	4/18/2019	\$ 63,125	\$ 43,153	\$ 32,457	\$ 75,609	19.6%
Teays River Integrated Agriculture	\$ 200,000	7/1/2015	\$ 198,974	\$ 28,770	\$ 315,333	\$ 344,103	7.9%
Twin Creeks Timber	\$ 200,000	1/7/2016	\$ 199,297	\$ 93,827	\$ 123,098	\$ 216,926	2.3%
U.S. Farming Realty Trust III	\$ 100,000	7/7/2015	\$ 110,017	\$ 11,565	\$ 139,895	\$ 151,460	6.7%
Canally Coinvest Holdings	\$ 12,500	12/9/2019	\$ 11,057	\$ -	\$ 13,946	\$ 13,946	11.6%

MainePERS Private Market Investments Summary: 03/31/2023

Private Equity

Fund Name	Commitment		Amount	Total	Current Market	Total Value (C+D)	Interim Net IRR
	(A)	Date of Commitment	Contributed (B)	Distributions (C)	Value (D)		
ABRY Advanced Securities Fund II	\$ 20,000	5/4/2011	\$ 20,530	\$ 29,628	\$ 345	\$ 29,973	13.1%
ABRY Advanced Securities Fund III	\$ 30,000	4/30/2014	\$ 44,799	\$ 23,884	\$ 20,031	\$ 43,915	-0.6%
ABRY Heritage Partners	\$ 10,000	5/31/2016	\$ 10,774	\$ 10,979	\$ 7,988	\$ 18,966	27.0%
ABRY Partners VII	\$ 10,000	4/29/2011	\$ 12,939	\$ 17,340	\$ 2,122	\$ 19,462	12.2%
ABRY Partners VIII	\$ 20,000	8/8/2014	\$ 23,864	\$ 29,732	\$ 3,997	\$ 33,729	10.3%
ABRY Senior Equity IV	\$ 10,000	12/7/2012	\$ 10,834	\$ 16,694	\$ 1,585	\$ 18,279	14.9%
ABRY Senior Equity V	\$ 12,050	1/19/2017	\$ 12,795	\$ 5,370	\$ 13,288	\$ 18,658	15.7%
Advent International GPE VII	\$ 30,000	6/29/2012	\$ 34,811	\$ 52,335	\$ 6,161	\$ 58,496	13.5%
Advent International GPE VIII	\$ 50,000	2/5/2016	\$ 55,594	\$ 42,125	\$ 64,241	\$ 106,366	18.6%
Advent International GPE IX	\$ 50,000	5/9/2019	\$ 45,503	\$ 4,998	\$ 62,838	\$ 67,836	24.4%
GPE IX TKE Co-Investment	\$ 24,000	3/30/2020	\$ 21,243	\$ -	\$ 29,834	\$ 29,834	13.5%
Advent International GPE X	\$ 45,000	4/28/2022	\$ 3,375	\$ -	\$ 2,758	\$ 2,758	NM
AI Co-Investment I-A	\$ 7,500	3/2/2023	\$ -	\$ -	\$ -	\$ -	NM
Advent Latin America PE Fund VI	\$ 20,000	10/17/2014	\$ 19,516	\$ 12,350	\$ 18,629	\$ 30,979	13.5%
Affinity Asia Pacific Fund IV	\$ 60,000	2/28/2013	\$ 64,783	\$ 74,402	\$ 28,830	\$ 103,232	14.7%
Affinity Asia Pacific Fund V	\$ 40,000	12/11/2017	\$ 22,419	\$ 4,771	\$ 22,431	\$ 27,202	10.5%
Bain Capital Ventures 2021	\$ 25,000	10/28/2020	\$ 17,750	\$ 1	\$ 18,580	\$ 18,581	3.4%
Bain Capital Ventures 2022	\$ 25,000	6/10/2022	\$ 438	\$ -	\$ 227	\$ 227	NM
Bain Capital Venture Coinvestment Fund III	\$ 15,000	4/1/2021	\$ 11,775	\$ -	\$ 13,044	\$ 13,044	NM
Bain Capital Venture Coinvestment Fund IV	\$ 15,000	6/10/2022	\$ -	\$ -	\$ -	\$ -	NM
Berkshire Fund VIII	\$ 15,000	7/20/2011	\$ 16,846	\$ 27,586	\$ 9,475	\$ 37,062	17.1%
Berkshire Fund IX	\$ 50,000	3/18/2016	\$ 56,849	\$ 35,932	\$ 54,791	\$ 90,723	16.8%
Blackstone Capital Partners VI	\$ 30,000	6/30/2010	\$ 37,729	\$ 51,078	\$ 12,235	\$ 63,313	12.4%
Blackstone Capital Partners VII	\$ 54,000	3/27/2015	\$ 61,027	\$ 38,218	\$ 54,099	\$ 92,317	13.7%
Carlyle Asia Partners III	\$ 15,000	12/31/2009	\$ 20,752	\$ 31,105	\$ 177	\$ 31,282	12.6%
Carlyle Asia Partners IV	\$ 60,000	6/3/2014	\$ 79,646	\$ 98,620	\$ 26,722	\$ 125,342	12.6%
Carlyle Asia Partners V	\$ 45,000	10/30/2017	\$ 35,482	\$ 10,769	\$ 29,305	\$ 40,074	8.3%
Centerbridge Capital Partners III	\$ 30,000	10/24/2014	\$ 47,767	\$ 45,744	\$ 29,207	\$ 74,951	18.6%
CB Blizzard Co-Invest	\$ 10,000	9/11/2019	\$ 15,684	\$ 10,053	\$ 2,740	\$ 12,793	-17.9%
Charterhouse Capital Partners VIII	\$ 13,500	1/6/2011	\$ 11,188	\$ 14,160	\$ -	\$ 14,160	7.9%
Charterhouse Capital Partners IX	\$ 4,500	1/6/2011	\$ 5,390	\$ 7,175	\$ 119	\$ 7,294	12.0%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Private Equity

Fund Name	Commitment		Amount	Total	Current Market	Total Value	Interim Net
	(A)	Date of Commitment	Contributed (B)	Distributions (C)	Value (D)	(C+D)	IRR
Charterhouse Capital Partners X	\$ 67,000	5/13/2015	\$ 57,291	\$ 60,602	\$ 43,723	\$ 104,325	21.0%
Charterhouse Acrostone	\$ 12,000	8/24/2018	\$ 13,254	\$ 21,268	\$ 0	\$ 21,268	16.9%
Charterhouse Capital Partners XI	\$ 45,000	4/23/2021	\$ 5,341	\$ -	\$ 6,785	\$ 6,785	NM
CVC Capital Partners VI	\$ 67,000	7/12/2013	\$ 97,841	\$ 105,628	\$ 69,394	\$ 175,022	17.1%
CVC Capital Partners VII	\$ 48,000	5/9/2017	\$ 72,466	\$ 38,259	\$ 67,610	\$ 105,869	23.1%
CVC Capital Partners VIII	\$ 44,000	6/11/2020	\$ 46,157	\$ 21,412	\$ 26,704	\$ 48,116	10.4%
EnCap Energy Capital VIII	\$ 30,000	1/31/2011	\$ 34,181	\$ 23,023	\$ 12,236	\$ 35,259	0.7%
EnCap Energy Capital Fund VIII Co-Investors, L.P.	\$ 16,238	12/8/2011	\$ 16,506	\$ 5,997	\$ 6,338	\$ 12,335	-4.1%
EnCap Energy Capital Fund IX	\$ 30,000	12/19/2012	\$ 34,541	\$ 36,668	\$ 13,312	\$ 49,981	10.4%
EnCap Energy Capital Fund X	\$ 40,000	3/5/2015	\$ 41,867	\$ 37,832	\$ 38,591	\$ 76,423	15.4%
EnCap Energy Capital Fund XI	\$ 40,000	5/31/2017	\$ 38,684	\$ 9,958	\$ 46,240	\$ 56,198	19.2%
EnCap Flatrock Midstream Fund III	\$ 20,000	4/9/2014	\$ 25,178	\$ 18,432	\$ 16,009	\$ 34,441	10.7%
EnCap Flatrock Midstream Fund IV	\$ 22,000	11/17/2017	\$ 19,604	\$ 7,454	\$ 15,328	\$ 22,782	8.0%
General Catalyst X - Early Venture	\$ 19,565	3/26/2020	\$ 18,880	\$ -	\$ 34,125	\$ 34,125	33.1%
General Catalyst X - Endurance	\$ 22,826	3/26/2020	\$ 22,859	\$ -	\$ 23,520	\$ 23,520	1.4%
General Catalyst X - Growth Venture	\$ 32,609	3/26/2020	\$ 31,467	\$ -	\$ 38,420	\$ 38,420	9.7%
General Catalyst XI - Creation	\$ 8,823	10/29/2021	\$ 2,143	\$ -	\$ 2,381	\$ 2,381	NM
General Catalyst XI - Endurance	\$ 29,412	10/29/2021	\$ 20,731	\$ -	\$ 20,168	\$ 20,168	NM
General Catalyst XI - Ignition	\$ 11,765	10/29/2021	\$ 6,910	\$ -	\$ 6,403	\$ 6,403	NM
GTCR Fund X	\$ 30,000	1/28/2011	\$ 31,766	\$ 64,445	\$ 198	\$ 64,643	21.4%
GTCR Fund XI	\$ 35,000	11/15/2013	\$ 34,961	\$ 70,749	\$ 44,619	\$ 115,369	33.9%
GTCR Fund XII	\$ 50,000	9/29/2017	\$ 51,223	\$ 31,746	\$ 53,386	\$ 85,131	25.4%
Co-Investment #1	\$ 5,238	4/26/2019	\$ 4,556	\$ -	\$ 8,957	\$ 8,957	19.0%
Co-Investment #2	\$ 5,997	11/1/2019	\$ 5,806	\$ 10,935	\$ 2,881	\$ 13,816	47.7%
GTCR XIII	\$ 50,000	10/27/2020	\$ 25,573	\$ 5,447	\$ 24,255	\$ 29,702	21.1%
GTCR XIV	\$ 50,000	12/16/2022	\$ -	\$ -	\$ -	\$ -	NM
H.I.G. Bayside Loan Fund II	\$ 25,000	5/28/2010	\$ 24,020	\$ 32,189	\$ 262	\$ 32,451	7.1%
H.I.G. Bayside Loan Ops Fund III (Europe)	\$ 30,000	7/27/2012	\$ 26,707	\$ 31,070	\$ 3,933	\$ 35,003	7.6%
H.I.G. Brazil & Latin America Partners	\$ 60,000	7/1/2015	\$ 67,684	\$ 19,264	\$ 78,474	\$ 97,739	13.3%
H.I.G. Capital Partners V	\$ 15,000	2/28/2013	\$ 20,352	\$ 28,359	\$ 11,086	\$ 39,445	23.4%
H.I.G. Europe Capital Partners II	\$ 22,500	7/1/2013	\$ 25,240	\$ 20,667	\$ 14,678	\$ 35,345	11.6%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Private Equity

Fund Name	Commitment		Amount	Total	Current Market	Total Value (C+D)	Interim Net IRR
	(A)	Date of Commitment	Contributed (B)	Distributions (C)	Value (D)		
H.I.G. Growth Buyouts & Equity Fund II	\$ 17,500	6/30/2011	\$ 23,547	\$ 26,958	\$ 14,955	\$ 41,913	14.9%
H.I.G. Growth Buyouts & Equity Fund III	\$ 35,000	9/13/2018	\$ 13,398	\$ -	\$ 13,223	\$ 13,223	NM
H.I.G Middle Market LBO Fund II	\$ 40,000	2/7/2014	\$ 47,963	\$ 63,274	\$ 28,616	\$ 91,889	28.2%
Co-Investment #1	\$ 9,000	10/12/2017	\$ 9,000	\$ -	\$ (28)	\$ (28)	-100.0%
Co-Investment #2*	\$ 686	6/19/2020	\$ 686	\$ -	\$ 896	\$ 896	11.1%
Co-Investment #3	\$ 1,000	6/1/2021	\$ 1,079	\$ -	\$ 15	\$ 15	NM
H.I.G. Middle Market LBO Fund III	\$ 40,000	7/23/2019	\$ 31,544	\$ 1,694	\$ 37,376	\$ 39,070	21.6%
Hellman & Friedman Capital Partners VII	\$ 30,000	6/19/2009	\$ 44,347	\$ 105,630	\$ 6,322	\$ 111,952	24.7%
Hellman & Friedman Capital Partners VIII	\$ 45,000	9/24/2014	\$ 48,585	\$ 26,839	\$ 54,926	\$ 81,765	14.0%
Hellman & Friedman Capital Partners IX	\$ 45,000	9/28/2018	\$ 44,605	\$ 1,069	\$ 59,680	\$ 60,749	15.1%
Hellman & Friedman Capital Partners X	\$ 45,000	5/10/2021	\$ 32,383	\$ -	\$ 33,030	\$ 33,030	NM
Inflexion Buyout Fund IV	\$ 27,000	9/30/2014	\$ 33,986	\$ 38,539	\$ 22,023	\$ 60,562	15.9%
Inflexion Partnership Capital Fund I	\$ 17,000	9/30/2014	\$ 25,728	\$ 39,627	\$ 7,261	\$ 46,887	22.5%
Inflexion Supplemental Fund IV	\$ 10,000	5/31/2016	\$ 14,860	\$ 20,923	\$ 8,137	\$ 29,060	24.5%
Kelso Investment Associates VIII	\$ 3,000	1/6/2011	\$ 3,022	\$ 4,263	\$ 136	\$ 4,399	8.1%
Kelso Investment Associates IX	\$ 60,000	11/5/2014	\$ 70,103	\$ 86,523	\$ 33,395	\$ 119,918	20.0%
KIA IX (Hammer) Investor	\$ 25,000	8/12/2016	\$ 25,426	\$ 69,298	\$ 312	\$ 69,609	21.4%
Kelso Investment Associates X	\$ 45,000	3/16/2018	\$ 46,561	\$ 13,311	\$ 70,582	\$ 83,892	35.6%
Kelso Investment Associates XI	\$ 45,000	12/22/2021	\$ 7,810	\$ 652	\$ 10,365	\$ 11,018	NM
Kelso XI Heights Co-Investment	\$ 12,000	8/19/2022	\$ 10,013	\$ -	\$ 10,839	\$ 10,839	NM
KKR North American Fund XI	\$ 60,000	2/7/2012	\$ 100,095	\$ 164,760	\$ 23,071	\$ 187,831	19.5%
KKR North America Fund XI (Platinum)	\$ 8,003	2/26/2016	\$ 8,040	\$ 2,313	\$ 6,053	\$ 8,366	0.8%
KKR Element Co-Invest	\$ 10,000	8/29/2016	\$ 10,050	\$ 24,030	\$ -	\$ 24,030	23.5%
KKR Americas XII	\$ 60,000	3/3/2016	\$ 61,403	\$ 26,301	\$ 72,690	\$ 98,991	18.5%
KKR Sigma Aggregator	\$ 15,000	6/22/2018	\$ 15,000	\$ -	\$ 23,205	\$ 23,205	9.6%
KKR Enterprise Co-Invest	\$ 15,000	10/11/2018	\$ 15,000	\$ -	\$ -	\$ -	-100.0%
KKR Enterprise Co-Invest AIV A	\$ 8,936	11/8/2019	\$ 8,936	\$ 7,243	\$ 1,237	\$ 8,480	-6.0%
KKR North America XIII	\$ 40,000	6/25/2021	\$ 13,403	\$ -	\$ 13,602	\$ 13,602	NM
KKR Special Situations Fund	\$ 60,000	12/19/2012	\$ 118,957	\$ 99,658	\$ 12,376	\$ 112,034	-2.1%
KKR Special Situations Fund II	\$ 60,000	12/19/2014	\$ 98,215	\$ 77,308	\$ 24,192	\$ 101,500	1.4%
Metwest Enhanced TALF Strategy Fund L. P.	\$ 75,000	7/31/2009	\$ 53,350	\$ 67,405	\$ -	\$ 67,405	10.2%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Private Equity

Fund Name	Commitment		Amount	Total	Current Market	Total Value (C+D)	Interim Net IRR
	(A)	Date of Commitment	Contributed (B)	Distributions (C)	Value (D)		
Oaktree Opportunities VIII	\$ 30,000	12/9/2009	\$ 30,000	\$ 43,920	\$ 94	\$ 44,013	9.1%
ONCAP IV	\$ 15,000	11/8/2016	\$ 13,085	\$ 3,296	\$ 17,561	\$ 20,857	14.7%
Onex Partners III	\$ 10,000	1/6/2011	\$ 11,202	\$ 17,022	\$ 1,770	\$ 18,792	13.2%
Onex Partners IV	\$ 60,000	11/22/2013	\$ 62,871	\$ 50,953	\$ 38,527	\$ 89,481	8.2%
Co-Investment #1	\$ 10,000	2/27/2017	\$ 10,471	\$ 1,235	\$ 8,928	\$ 10,164	-0.6%
Onex Partners V	\$ 45,000	7/11/2017	\$ 39,000	\$ 5,911	\$ 41,686	\$ 47,597	12.4%
Paine & Partners Capital Fund IV	\$ 60,000	12/18/2014	\$ 56,456	\$ 29,070	\$ 48,054	\$ 77,124	7.8%
Wawona Co-Investment Fund I	\$ 15,000	3/31/2017	\$ 15,023	\$ -	\$ 4	\$ 4	-99.0%
Lyons Magnus Co-Investment Fund I	\$ 15,000	11/8/2017	\$ 15,016	\$ -	\$ 24,246	\$ 24,246	9.3%
PSP Maverick Co-Invest	\$ 7,238	9/12/2019	\$ 7,264	\$ -	\$ 517	\$ 517	-52.9%
PSP AH&N Co-Investment Fund	\$ 19,724	11/27/2019	\$ 17,539	\$ -	\$ 31,722	\$ 31,722	20.8%
Paine Schwartz Food Chain Fund V	\$ 45,000	8/3/2018	\$ 45,366	\$ 13,083	\$ 49,166	\$ 62,249	27.0%
SNFL Co-Investment Fund	\$ 5,000	10/11/2019	\$ 5,024	\$ 265	\$ 9,906	\$ 10,171	22.8%
Rhone Partners V	\$ 56,000	3/12/2015	\$ 71,494	\$ 34,616	\$ 79,931	\$ 114,547	15.4%
Riverside Capital Appreciation Fund VI	\$ 60,000	7/3/2013	\$ 61,710	\$ 79,808	\$ 18,122	\$ 97,930	12.1%
RCAF VI CIV XXXII	\$ 12,399	10/21/2015	\$ 12,687	\$ 35,260	\$ -	\$ 35,260	19.9%
Riverside Micro-Cap Fund III	\$ 35,000	6/30/2014	\$ 49,448	\$ 183,115	\$ 54,310	\$ 237,424	36.7%
Riverside Micro-Cap Fund IV	\$ 60,000	10/23/2015	\$ 55,659	\$ -	\$ 88,831	\$ 88,831	9.2%
Riverside Micro-Cap Fund IV-B	\$ 20,000	8/9/2019	\$ 24,292	\$ 5,583	\$ 36,910	\$ 42,493	27.5%
Riverside Micro-Cap Fund V	\$ 40,000	8/21/2018	\$ 33,265	\$ -	\$ 49,765	\$ 49,765	19.4%
Riverside Micro-Cap Fund VI	\$ 45,000	8/26/2021	\$ 12,766	\$ 263	\$ 12,453	\$ 12,717	NM
Shoreview Capital Partners III	\$ 24,000	7/24/2013	\$ 25,657	\$ 28,779	\$ 24,112	\$ 52,891	18.5%
Shoreview Capital Partners IV	\$ 30,000	6/3/2019	\$ 13,403	\$ 5,975	\$ 12,554	\$ 18,529	NM
Sovereign Capital IV	\$ 46,500	7/7/2014	\$ 40,344	\$ 26,905	\$ 32,927	\$ 59,833	10.8%
Summit Partners Credit II	\$ 60,000	10/25/2013	\$ 90,752	\$ 87,328	\$ 20,221	\$ 107,550	6.5%
Summit Europe Growth Equity III	\$ 22,000	3/18/2020	\$ 13,688	\$ -	\$ 12,618	\$ 12,618	-6.5%
Summit Europe Growth Equity IV	\$ 22,000	2/10/2023	\$ -	\$ -	\$ -	\$ -	NM
Summit Growth Equity VIII	\$ 25,000	5/27/2011	\$ 33,445	\$ 63,535	\$ 12,182	\$ 75,717	26.4%
Co-Investment #1*	\$ 16,000	6/3/2015	\$ 16,000	\$ 38,735	\$ 21,304	\$ 60,039	32.8%
Summit Growth Equity IX	\$ 60,000	8/26/2015	\$ 83,322	\$ 88,968	\$ 90,187	\$ 179,155	32.7%
Co-Investment #1	\$ 15,000	11/29/2016	\$ 14,895	\$ 41,743	\$ -	\$ 41,743	159.6%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Private Equity

Fund Name	Commitment		Amount	Total	Current Market	Total Value (C+D)	Interim Net IRR
	(A)	Date of Commitment	Contributed (B)	Distributions (C)	Value (D)		
Summit Partners Co-Invest (Ironman)	\$ 15,000	4/20/2018	\$ 15,004	\$ -	\$ 14,979	\$ 14,979	0.0%
Summit Partners Co-Invest (Giants-B)	\$ 15,000	10/22/2019	\$ 15,000	\$ 41,780	\$ 5,433	\$ 47,213	82.0%
Summit Growth Equity X	\$ 60,000	2/26/2019	\$ 59,804	\$ 18,176	\$ 60,791	\$ 78,967	20.6%
Summit Partners Co-Invest (Lions)	\$ 7,534	10/14/2020	\$ 7,534	\$ -	\$ 14,454	\$ 14,454	31.9%
Summit Partners Co-Invest (Indigo)	\$ 10,000	12/11/2020	\$ 11,436	\$ -	\$ 11,426	\$ 11,426	0.0%
Summit Growth Equity XI	\$ 45,000	10/1/2021	\$ 8,194	\$ -	\$ 8,611	\$ 8,611	NM
Summit Venture Capital III	\$ 13,150	5/27/2011	\$ 18,044	\$ 32,899	\$ 2,949	\$ 35,849	17.6%
Summit Venture Capital IV	\$ 40,000	8/26/2015	\$ 50,591	\$ 48,377	\$ 60,160	\$ 108,537	39.4%
Summit Venture Capital V	\$ 45,000	6/16/2020	\$ 24,906	\$ 773	\$ 23,666	\$ 24,438	-1.8%
Summit Partners Co-Invest (CS)	\$ 12,000	10/22/2021	\$ 13,760	\$ -	\$ 11,689	\$ 11,689	NM
Technology Crossover Ventures VIII	\$ 60,000	5/8/2013	\$ 52,307	\$ 39,509	\$ 71,658	\$ 111,167	12.1%
Technology Crossover Ventures IX	\$ 60,000	2/19/2016	\$ 48,428	\$ 46,154	\$ 52,786	\$ 98,940	20.7%
TCV Sports	\$ 8,000	9/25/2018	\$ 8,000	\$ -	\$ 10,095	\$ 10,095	5.3%
Technology Crossover Ventures X	\$ 45,000	8/31/2018	\$ 36,448	\$ 6,801	\$ 60,098	\$ 66,899	24.0%
Technology Crossover Ventures XI	\$ 45,000	10/2/2020	\$ 23,033	\$ -	\$ 20,923	\$ 20,923	-6.7%
Technology Impact Fund	\$ 40,000	12/18/2017	\$ 36,926	\$ 23,243	\$ 85,098	\$ 108,341	49.5%
Technology Impact Fund II	\$ 40,000	4/13/2021	\$ 11,553	\$ 325	\$ 11,789	\$ 12,114	NM
Technology Impact Growth Fund	\$ 40,000	11/26/2018	\$ 47,885	\$ 26,676	\$ 28,895	\$ 55,571	7.7%
Technology Impact Growth Fund II	\$ 40,000	8/6/2021	\$ 8,786	\$ -	\$ 7,352	\$ 7,352	NM
Thoma Bravo Fund XI	\$ 50,000	5/1/2014	\$ 72,220	\$ 135,521	\$ 60,578	\$ 196,099	26.8%
Thoma Bravo Fund XII	\$ 60,000	4/27/2016	\$ 78,447	\$ 80,943	\$ 62,873	\$ 143,816	16.4%
Thoma Bravo Fund XIII	\$ 45,000	12/7/2018	\$ 59,671	\$ 31,856	\$ 67,698	\$ 99,554	29.6%
Thoma Bravo Special Opportunities Fund II	\$ 15,000	3/27/2015	\$ 18,113	\$ 21,091	\$ 16,074	\$ 37,165	16.6%
Thoma Bravo Discover Fund IV	\$ 45,000	7/1/2022	\$ 14,963	\$ -	\$ 15,445	\$ 15,445	NM
Tillridge Global Agribusiness Partners II	\$ 50,000	10/21/2016	\$ 28,819	\$ 2,900	\$ 24,917	\$ 27,817	-1.3%
Water Street Healthcare Partners III	\$ 25,000	7/25/2012	\$ 29,890	\$ 78,657	\$ 8,193	\$ 86,850	35.5%
Water Street Healthcare Partners IV	\$ 33,000	9/15/2017	\$ 34,342	\$ 10,624	\$ 36,813	\$ 47,436	14.4%
Water Street Healthcare Partners V	\$ 43,000	4/15/2022	\$ 5,719	\$ -	\$ 4,962	\$ 4,962	NM
Wayzata Opportunities Fund III	\$ 30,000	9/11/2012	\$ 14,718	\$ 10,875	\$ 4,419	\$ 15,294	0.9%
Wynnchurch Capital Partners IV	\$ 40,000	10/23/2014	\$ 38,209	\$ 39,897	\$ 57,702	\$ 97,599	27.6%
Wynnchurch Capital Partners V	\$ 40,000	1/15/2020	\$ 25,435	\$ 271	\$ 31,589	\$ 31,860	19.7%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Real Estate

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
Angelo Gordon Net Lease IV	\$ 50,000	2/17/2020	\$ 40,452	\$ 2,365	\$ 42,103	\$ 44,467	6.3%
Angelo Gordon Realty Fund XI	\$ 50,000	3/31/2022	\$ 5,000	\$ -	\$ 4,312	\$ 4,312	NM
Bain Capital Real Estate II	\$ 50,000	3/5/2021	\$ 23,277	\$ 2,365	\$ 23,999	\$ 26,364	NM
Blackrock Granite Property Fund	\$ 63,791	9/30/2006	\$ 68,771	\$ 53,312	\$ -	\$ 53,312	-4.9%
Blackstone Property Partners	\$ 350,000	6/29/2017	\$ 350,000	\$ 39,612	\$ 403,939	\$ 443,550	5.6%
Blackstone Real Estate Partners VII	\$ 75,000	2/26/2012	\$ 104,255	\$ 155,587	\$ 14,229	\$ 169,816	15.0%
Blackstone Real Estate Partners VIII	\$ 50,000	3/27/2015	\$ 63,567	\$ 64,827	\$ 38,252	\$ 103,079	16.1%
Blackstone Real Estate Partners IX	\$ 40,000	12/21/2018	\$ 43,253	\$ 14,974	\$ 46,939	\$ 61,913	26.4%
Barings Asia Real Estate II	\$ 50,000	7/31/2018	\$ 21,041	\$ -	\$ 18,887	\$ 18,887	NM
EQT Real Estate II	\$ 55,000	4/26/2019	\$ 31,496	\$ 5,268	\$ 30,185	\$ 35,453	8.4%
EQT Real Estate Rock Co-Investment	\$ 11,000	8/10/2020	\$ 9,090	\$ -	\$ 10,842	\$ 10,842	9.3%
H/2 Credit Partners, L.P.	\$ 75,000	6/21/2011	\$ 75,000	\$ 112,177	\$ -	\$ 112,177	5.9%
Harrison Street Core Property Fund, L.P.	\$ 75,000	4/30/2012	\$ 95,499	\$ 51,616	\$ 133,387	\$ 185,003	8.7%
HSRE-Coyote Maine PERS Core Co-Investment	\$ 20,000	12/4/2020	\$ 14,168	\$ 471	\$ 13,370	\$ 13,841	-1.0%
High Street Real Estate Fund IV, L.P.	\$ 25,000	8/23/2013	\$ 24,717	\$ 34,157	\$ -	\$ 34,157	14.7%
High Street Real Estate Fund V	\$ 25,000	7/24/2015	\$ 24,925	\$ 36,176	\$ -	\$ 36,176	13.2%
High Street Real Estate Fund VI	\$ 25,000	3/22/2019	\$ 25,000	\$ 3,916	\$ 35,714	\$ 39,630	21.8%
HSREF VI Elgin Co-Invest	\$ 10,000	4/9/2021	\$ 10,000	\$ 1,268	\$ 13,197	\$ 14,465	NM
High Street Real Estate Fund VII	\$ 35,000	8/16/2021	\$ 33,151	\$ -	\$ 35,282	\$ 35,282	NM
High Street Real Estate VII Venture	\$ 15,000	3/17/2023	\$ -	\$ -	\$ -	\$ -	NM
Hines US Property Partners	\$ 200,000	9/9/2021	\$ 98,195	\$ 10,637	\$ 92,031	\$ 102,669	NM
Invesco Real Estate Asia IV	\$ 30,000	3/25/2020	\$ 22,494	\$ 12,597	\$ 11,597	\$ 24,193	11.6%
Invesco US Income Fund	\$ 195,000	7/17/2014	\$ 223,678	\$ 64,955	\$ 320,348	\$ 385,303	11.0%
IPI Data Center Partners I	\$ 30,000	12/15/2017	\$ 34,569	\$ 18,635	\$ 35,978	\$ 54,614	18.0%
IPI Data Center Partners II	\$ 25,000	12/20/2019	\$ 17,608	\$ 1,619	\$ 15,801	\$ 17,420	-1.1%
JPMCB Strategic Property Fund	\$ 130,000	11/15/2005	\$ 186,941	\$ 297,519	\$ -	\$ 297,519	5.8%
KKR Real Estate Partners Europe I	\$ 50,000	12/2/2015	\$ 52,648	\$ 51,074	\$ 17,506	\$ 68,580	9.9%
KKR Real Estate Partners Europe II	\$ 25,000	12/23/2019	\$ 18,469	\$ 5,644	\$ 13,799	\$ 19,443	4.8%
KKR Real Estate Partners Americas I	\$ 50,000	12/20/2013	\$ 50,019	\$ 59,390	\$ 2,314	\$ 61,704	10.9%
KKR Real Estate Partners Americas II	\$ 50,000	6/2/2016	\$ 59,370	\$ 67,659	\$ 14,976	\$ 82,635	21.1%
Northbridge-Strategic Fund II	\$ 30,000	2/8/2019	\$ 30,000	\$ 3,748	\$ 44,338	\$ 48,086	12.7%
Prima Mortgage Investment Trust, LLC	\$ 75,000	7/29/2011	\$ 97,490	\$ 131,918	\$ -	\$ 131,918	3.8%
Principal Life Insurance Company U.S. Property	\$ 60,000	5/20/2005	\$ 60,000	\$ 125,410	\$ -	\$ 125,410	6.2%

(all dollar amounts in thousands)

MainePERS Private Market Investments Summary: 03/31/2023

Real Estate

Fund Name	Commitment (A)	Date of Commitment	Amount Contributed (B)	Total Distributions (C)	Current Market Value (D)	Total Value (C+D)	Interim Net IRR
PRISA	\$ 90,000	6/30/2005	\$ 139,622	\$ 222,450	\$ -	\$ 222,450	5.3%
Rubenstein Properties Fund III	\$ 30,000	10/23/2015	\$ 30,606	\$ 627	\$ 19,808	\$ 20,435	-9.2%
LCC Co-Investor B	\$ 15,000	10/18/2019	\$ 15,000	\$ -	\$ 8,255	\$ 8,255	-18.2%
Rubenstein Properties Fund IV	\$ 25,000	4/16/2019	\$ 8,232	\$ 2	\$ 5,165	\$ 5,166	NM
Prudential Senior Housing Fund V	\$ 50,000	3/17/2015	\$ 41,333	\$ 5,453	\$ 50,386	\$ 55,839	5.9%
Smart Markets Fund, L.P.	\$ 195,000	6/17/2013	\$ 174,933	\$ 67,075	\$ 270,486	\$ 337,561	9.8%
Stonelake Opportunity Partners VII	\$ 40,000	6/30/2022	\$ 0	\$ -	\$ (596)	\$ (596)	NM
Walton Street Real Estate Fund VII	\$ 50,000	5/9/2012	\$ 43,990	\$ 49,882	\$ 11,188	\$ 61,070	9.3%
Walton Street Real Estate Fund VIII	\$ 50,000	10/23/2015	\$ 42,685	\$ 35,113	\$ 22,730	\$ 57,842	9.8%
Co-Investment #1	\$ 10,000	9/27/2017	\$ 10,293	\$ 4,160	\$ -	\$ 4,160	-60.0%
Westbrook Real Estate Fund IX	\$ 15,000	6/30/2014	\$ 17,409	\$ 17,500	\$ 2,918	\$ 20,418	5.8%
Westbrook Real Estate Fund X	\$ 50,000	1/15/2015	\$ 48,632	\$ 42,649	\$ 17,351	\$ 60,000	9.5%
Westbrook Real Estate Fund XI	\$ 40,000	1/31/2019	\$ 21,291	\$ 10,513	\$ 14,640	\$ 25,153	20.5%

MainePERS Private Market Investments Summary: 3/31/2023

Notes: *As of 12/31/22. NM = Not Meaningful. MainePERS only reports IRRs for funds with more than 24 months of history and for which Amount Contributed is greater than 50% of Commitments. "Date of Commitment" is not the date of first capital draw. The "IRR" presented uses interim estimates and may not be indicative of ultimate performance of partnership investments due to a number of factors including lags in valuation, maturity of fund, and differences in investment pace and strategy of various funds. Performance figures should not be used to compare returns among multiple funds or different limited partners. Private market investments are long-term investments which are expected to generate returns over the course of their entire life cycle of 10 or more years. Common industry practice dictates that any performance analysis on these funds while they are still in the early years of their investment cycle would not generate meaningful results. The Interim Net IRR figures presented in this table are based on cash flow information provided by the general partner. The above information was not prepared, reviewed, or approved by any of the partnerships, general partners, or their affiliates and may differ from those generated by the general partner or other limited partners due to differences in timing of investments, disposal of in-kind distributions, and accounting and valuation policies.

MAINEPERS**BOARD OF TRUSTEES INVESTMENTS MEMORANDUM**

TO: BOARD MEMBERS
FROM: JAMES BENNETT, CHIEF INVESTMENT OFFICER
SUBJECT: QUARTERLY INVESTMENT EDUCATION
DATE: JULY 5, 2023

Michael Cembalest will be joining this month's meeting via Zoom to discuss Energy Markets and the Energy Transition. Michael is the Chairman of Market and Investment Strategy at JP Morgan Asset Management and is well-known for his annual research reports on energy markets. The slides for this presentation will be posted on Govenda once they are available.

POLICY REFERENCE

[Board Policy 1.8 – Trustee Education](#)

[Board Policy 2.1 – Investment Policy Statement](#)

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

Wind resistance: Beaufort scale assessment of the renewable transition

Summer 2023

Michael Cembalest, Chairman of Market and Investment Strategy, J.P. Morgan Asset & Wealth Management

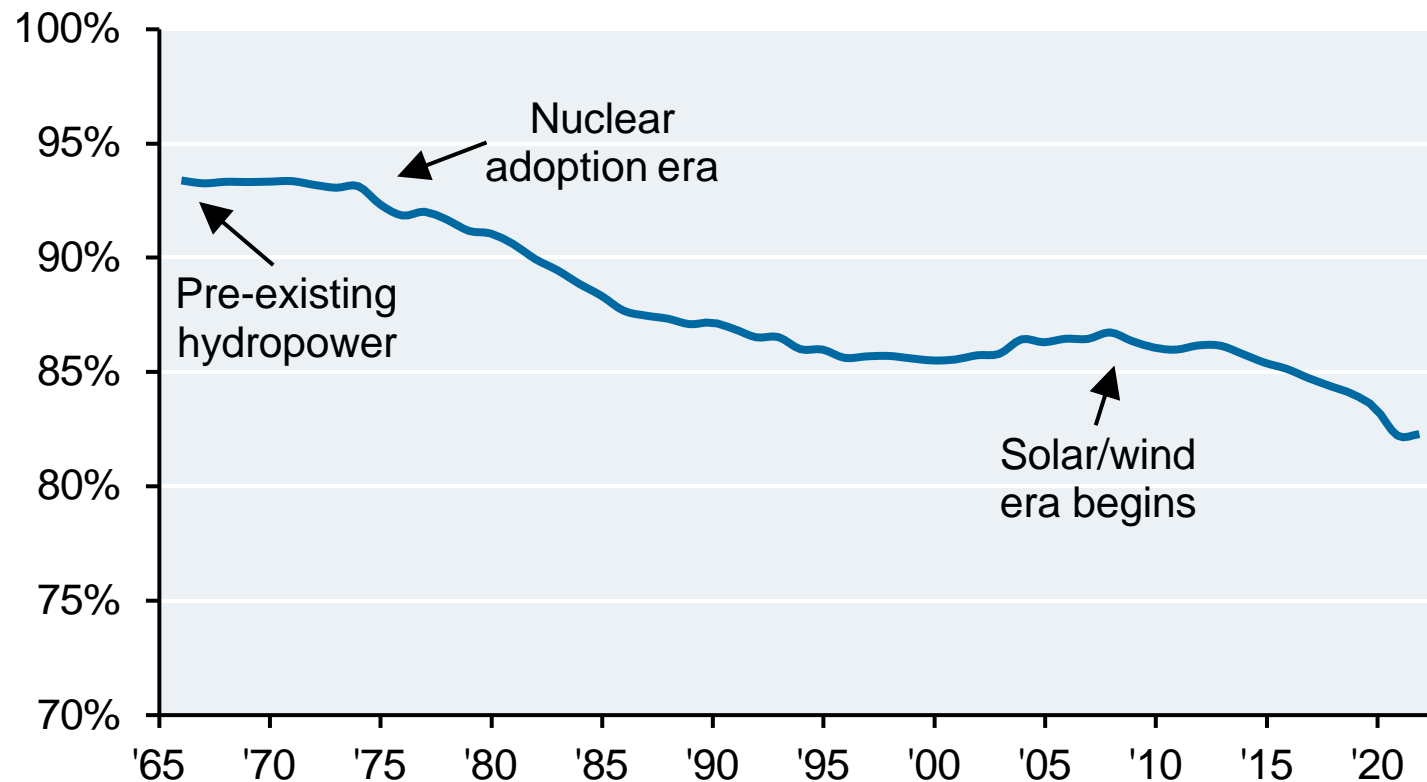
INVESTMENT AND INSURANCE PRODUCTS ARE:

- NOT FDIC INSURED • NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY
- NOT A DEPOSIT OR OTHER OBLIGATION OF, OR GUARANTEED BY, JPMORGAN CHASE BANK, N.A. OR ANY OF ITS AFFILIATES
- SUBJECT TO INVESTMENT RISKS, INCLUDING POSSIBLE LOSS OF THE PRINCIPAL AMOUNT INVESTED

The second decarbonization era is now underway

Fossil fuel share of primary energy since 1965

% of global primary energy consumption from coal, oil and nat gas

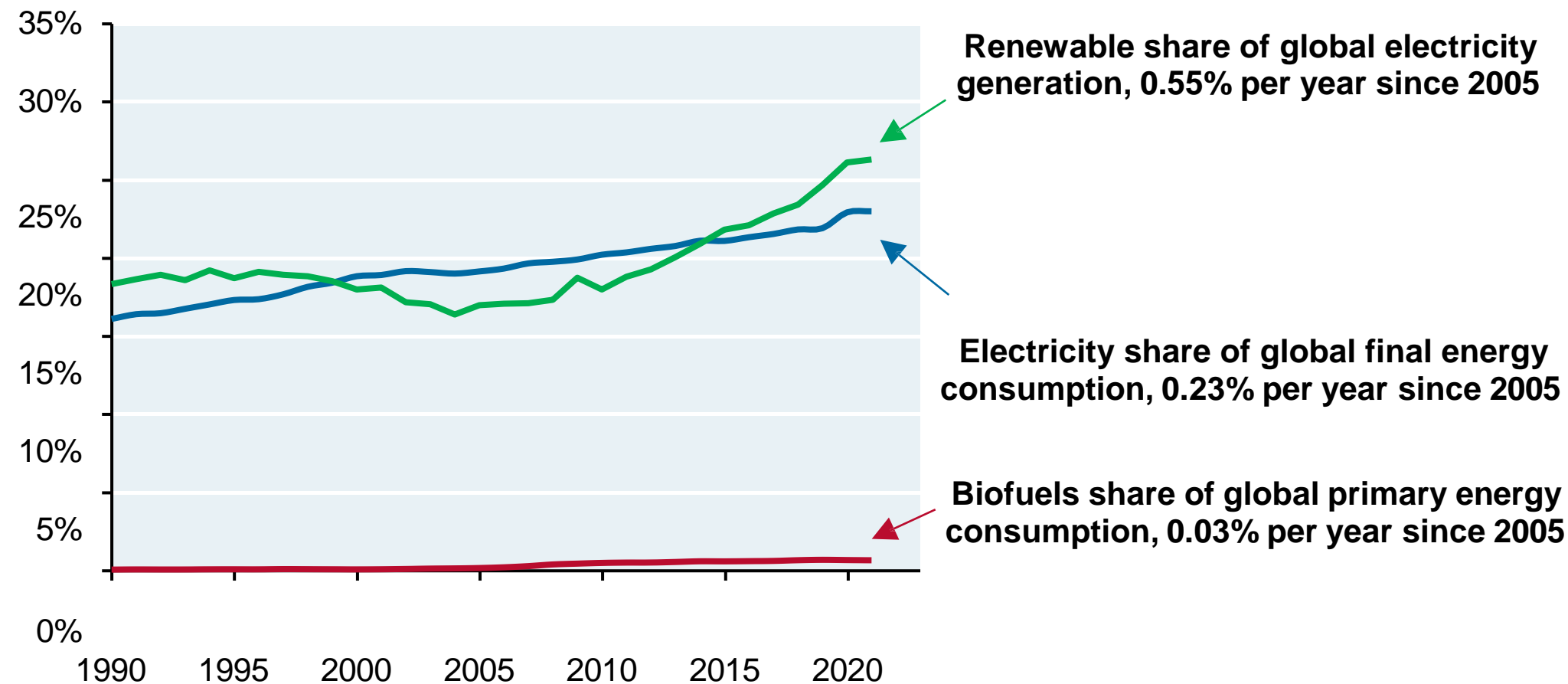


Source: BP Statistical Review of World Energy, JPMAM. 2022.

Decarbonization of electricity running 2x faster than decarbonization of energy use

The three energy transitions

Percent



Source: BP Statistical Review of World Energy, JPMAM. 2022.

Beaufort scale

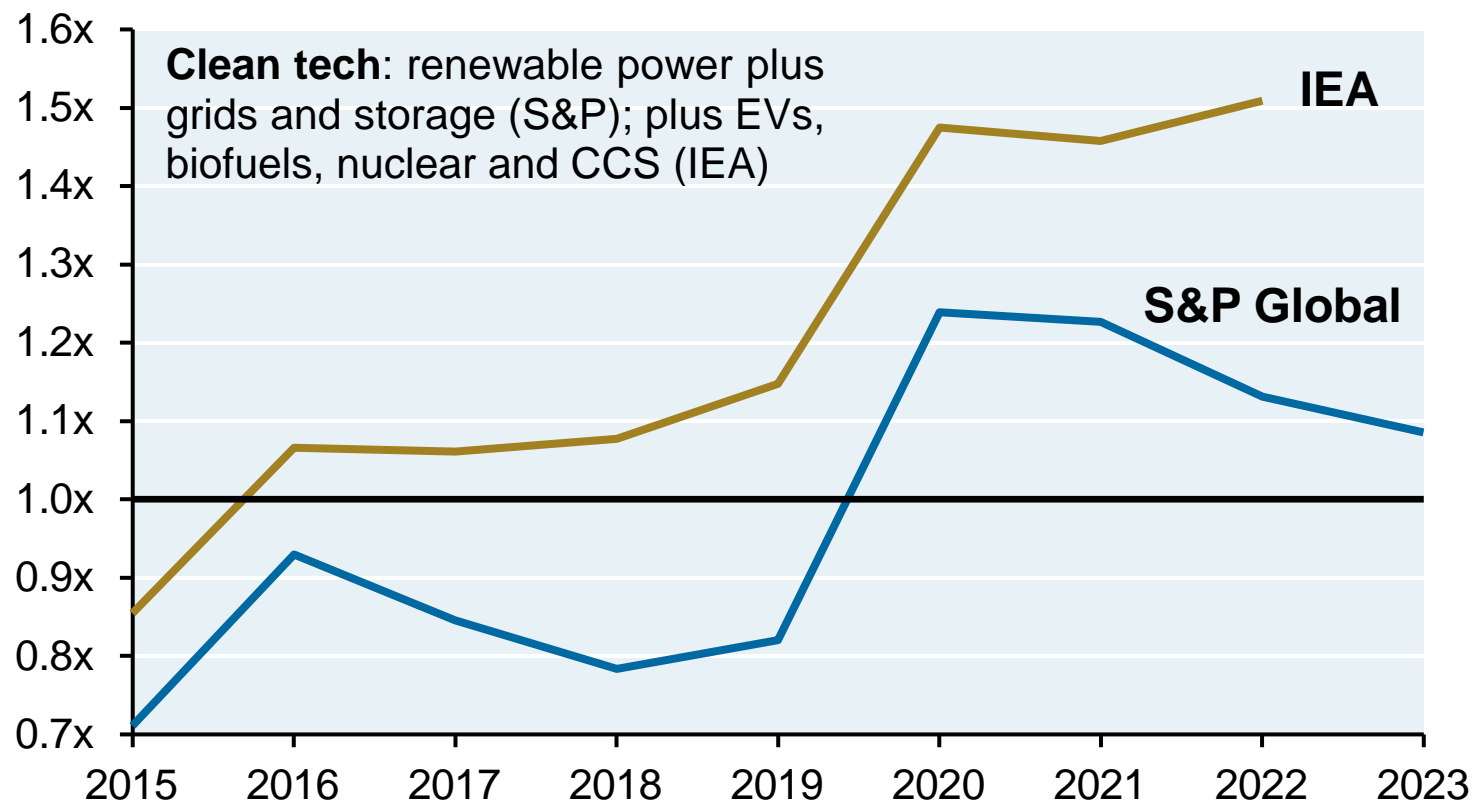
5 mph Light breeze
15 mph Moderate breeze
25 mph Strong breeze
35 mph Gale
50 mph Storm
65 mph Hurricane

5 mph
Light breeze

Capital

Clean tech spending outpacing fossil fuels

Ratio, clean tech / fossil fuel capital spending by year



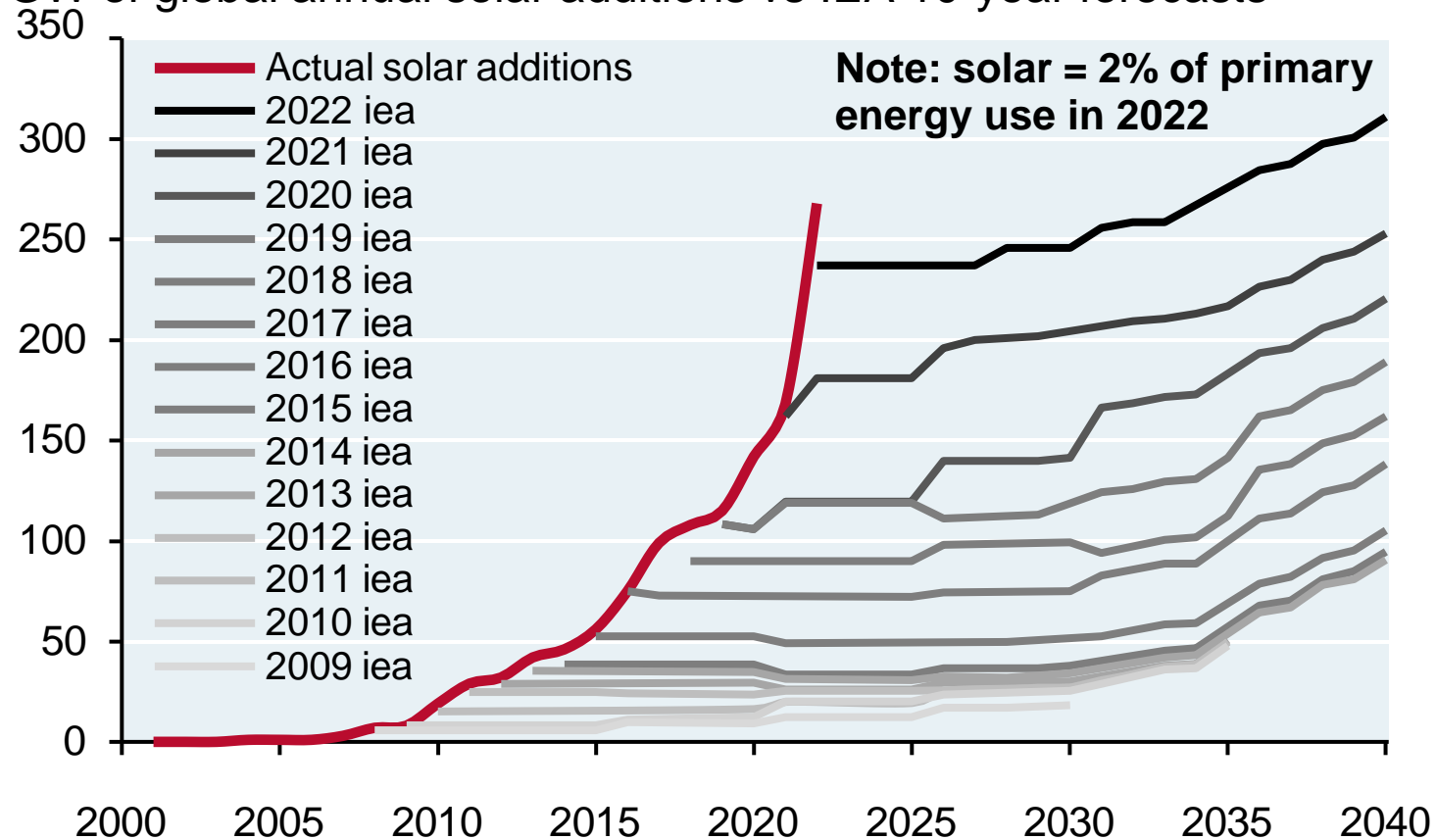
Source: S&P Global, IEA, JPMAM. 2023.

5 mph
Light breeze

Polysilicon

IEA consistently underestimated solar capacity growth

GW of global annual solar additions vs IEA 10-year forecasts



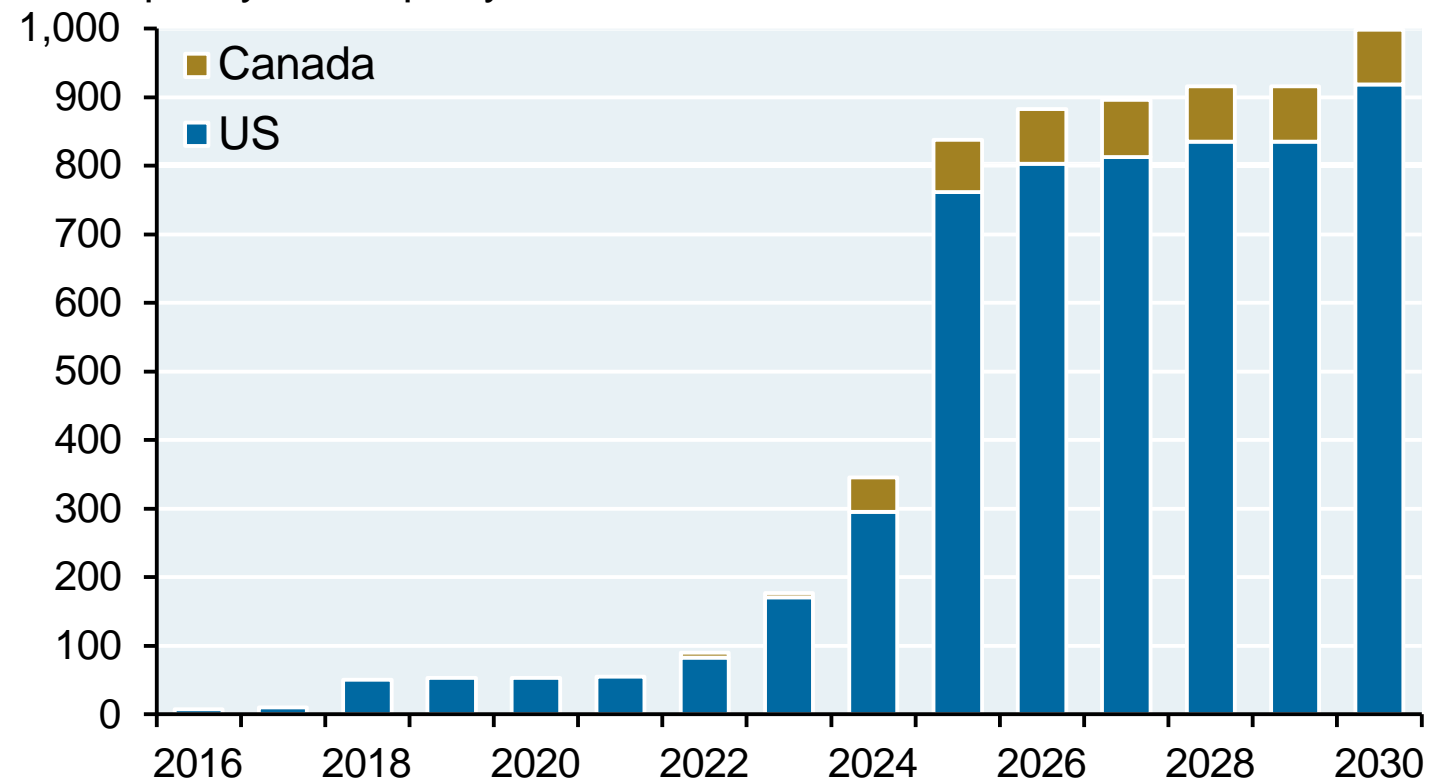
Source: Carbon Brief, BNEF. 2022. IEA = International Energy Agency.

5 mph
Light breeze

Battery manufacturing

North America announced battery plant capacity

Net capacity, GWh per year

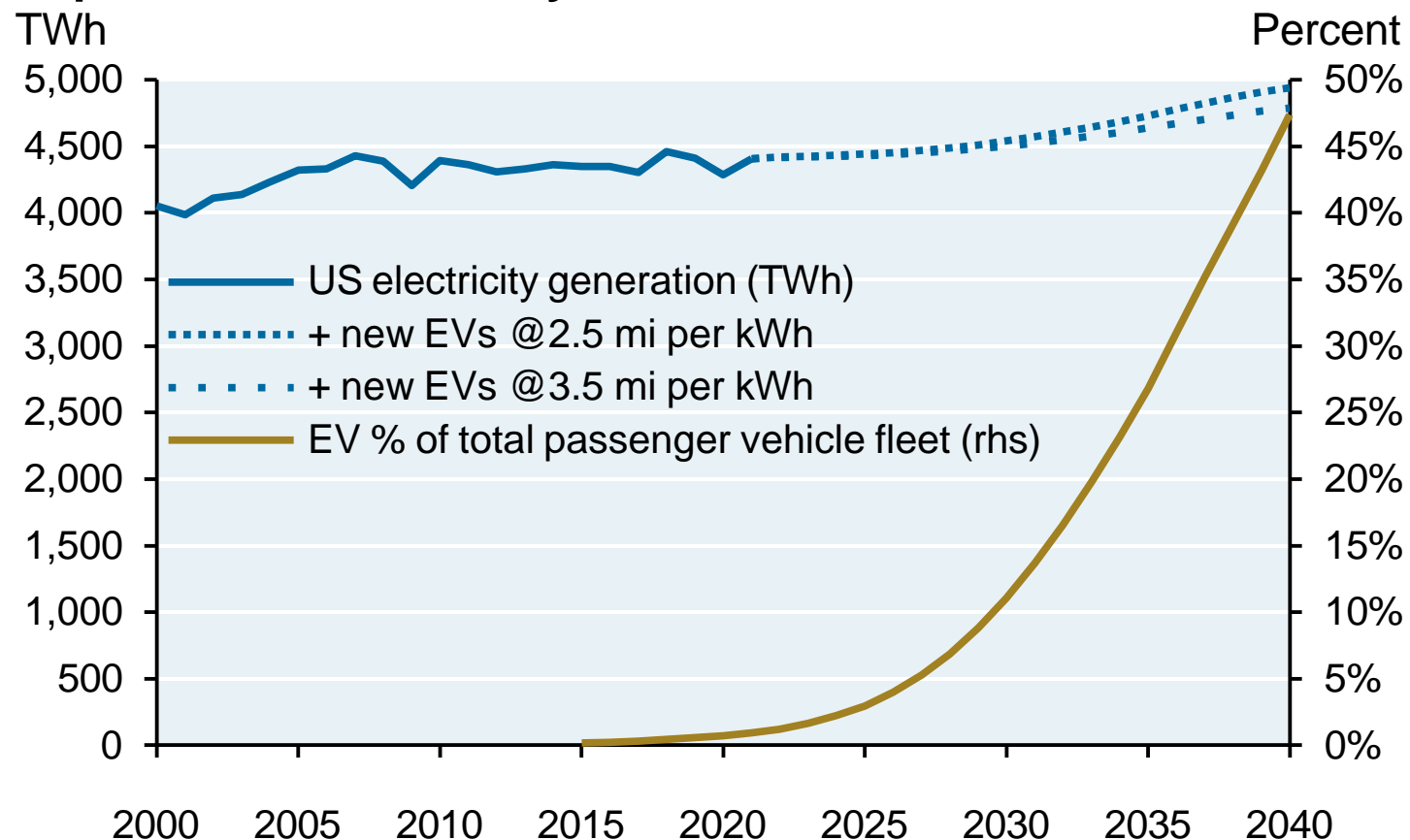


Source: Argonne National Laboratory. November 2022.

15 mph
Moderate breeze

Electricity demand impact from more EVs

Impact on US electricity demand from new EVs



Source: BP, BNEF, JPMAM. 2022.

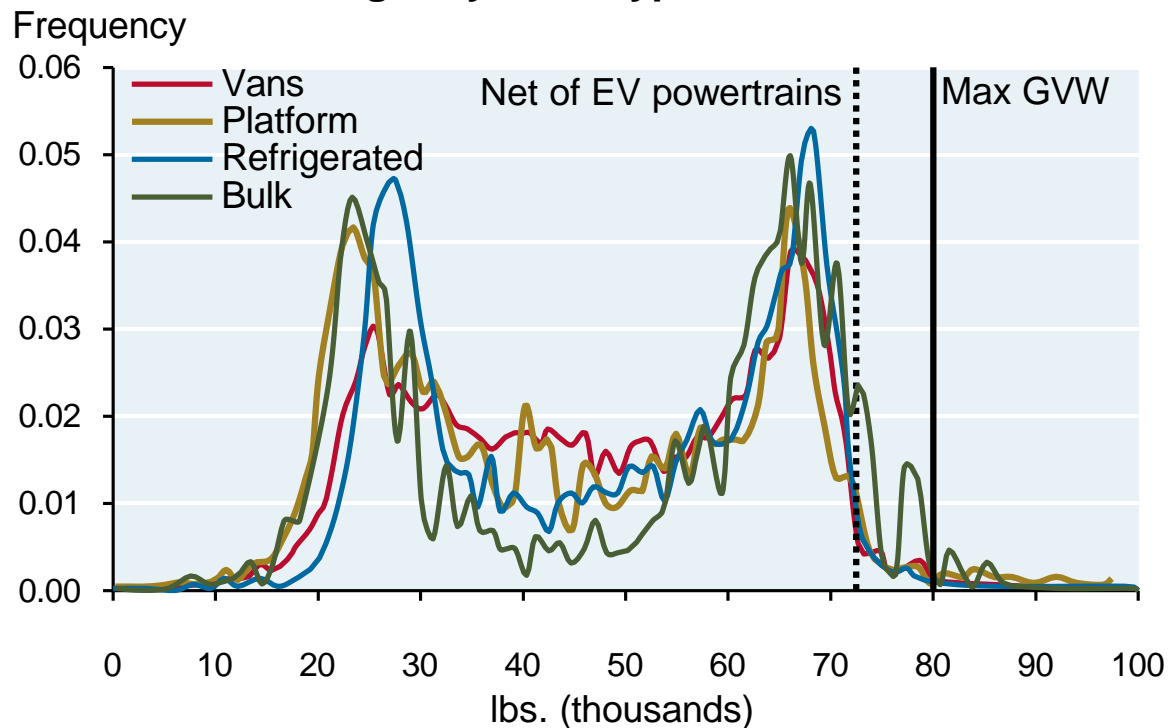
DoE, DoT, McKinsey, JPM:

- 3-4 TWh per mm EVs
- 2%-3% increase in electricity demand by 2030

15 mph
Moderate breeze

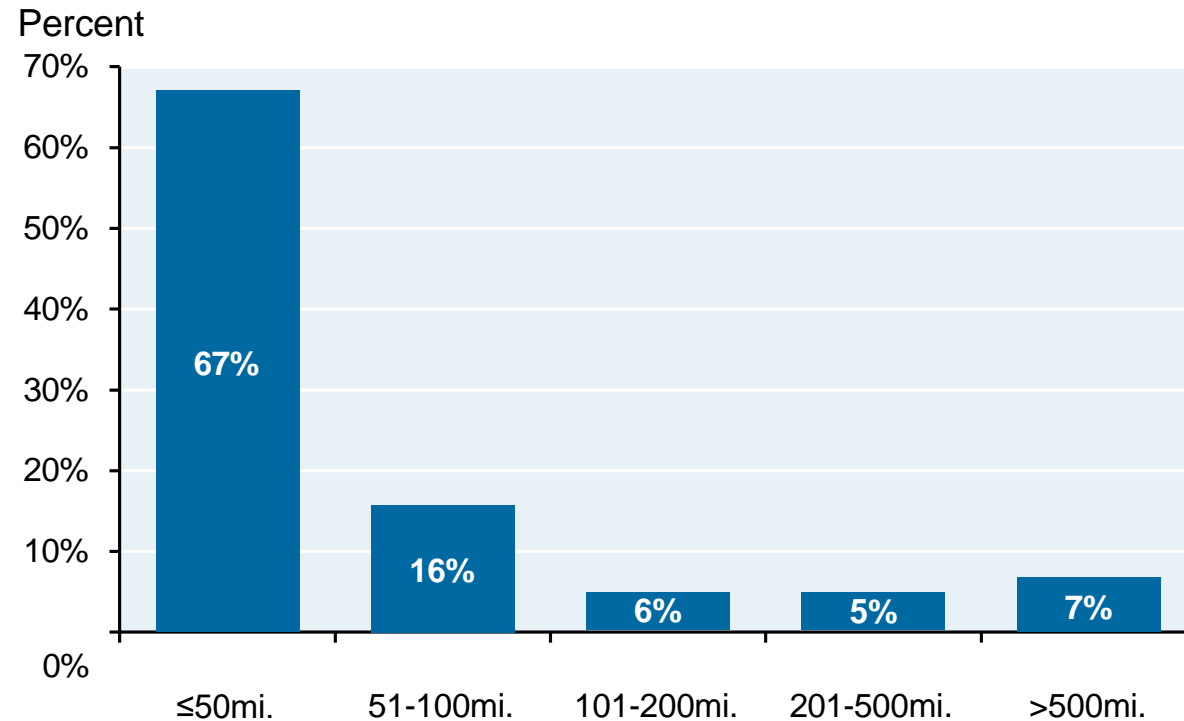
Electric trucking battery/powertrain weights and range

Gross vehicle weight by truck type



Source: Hernandez - 'Estimation of Avg. Payloads...', NACFE. JPMAM. 2023.

Truck freight trip length



Source: NACFE, VIUS, DOT. 2002.

15 mph
Moderate breeze

Public infrastructure for EVs

US EV charging infrastructure assumptions for 2030

	EVs in the fleet, mm	Workplace chargers	Public Level 2 chargers	Dir. Current Fast Charging ports
Current data	3.5	10,000	104,483	30,551
<i>Required by 2030</i>				
International Council on Clean Transportation	26.0	1,300,000	900,000	180,000
Edison Electric Institute	26.4	1,200,000	2,000,000	140,000
McKinsey/Biden goal	48.0	530,000	675,000	533,000

Source: US DoE; Argonne National Labs; IEEE Spectrum, "EV Transition Explained" (Chap. 4). March 2023.

25 mph
Strong breeze

Residential infrastructure for electrification

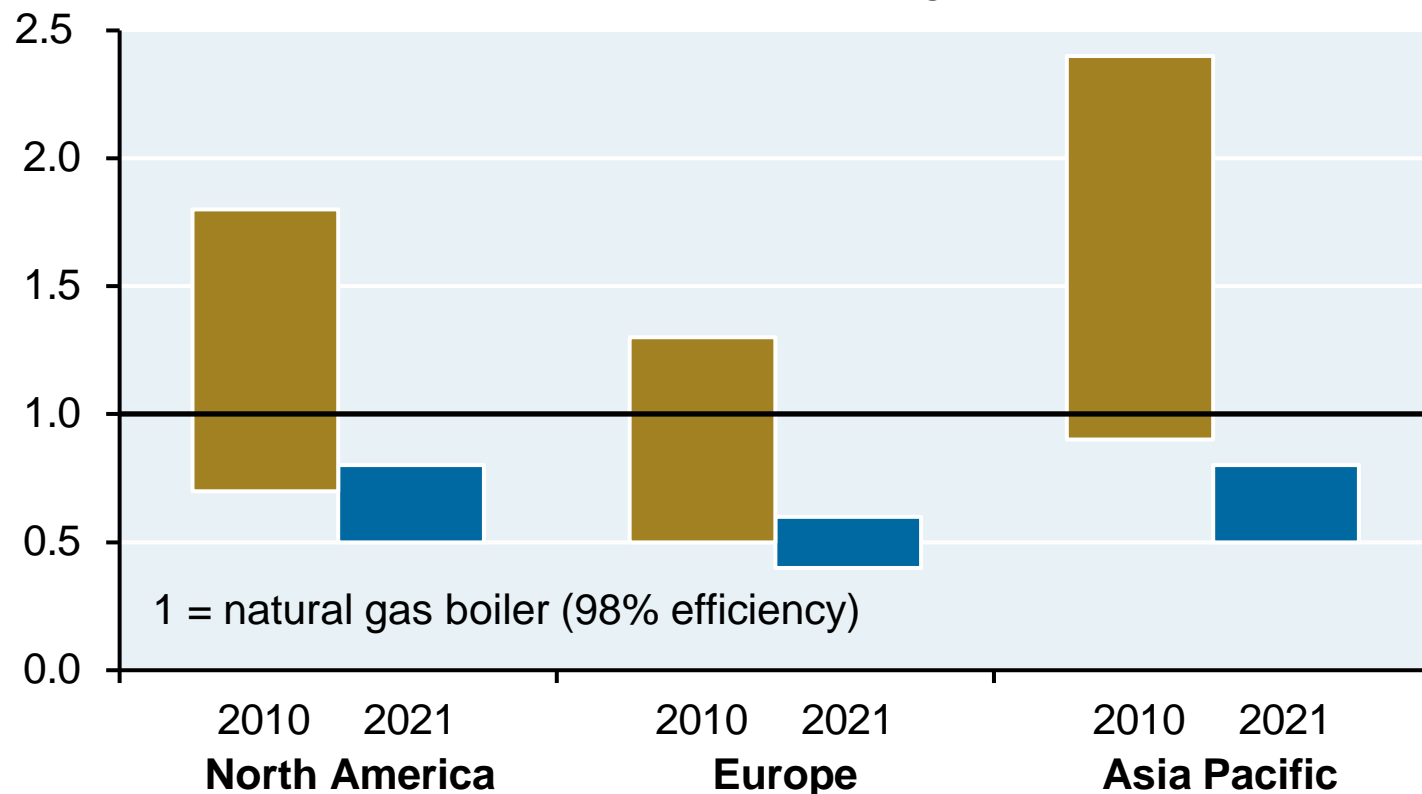
- 37.5 kilovolt-ampere transformer supports 15 households, each of which draws ~2 kW of power. **But converting gas furnace to heat pump could draw 4 to 6 kW, and EV Level 2 charger could draw 3 to 19 kW**
- Palo Alto found that more than 95% of residential transformers would be overloaded if the city hit 2030 electrification targets for EVs and household appliances
- Multiple Level 2 chargers on one transformer can reduce its life from an expected 30-40 years to just 3 years

15 mph
Moderate breeze

Decarbonization of winter heating

Large efficiency gains in heat pump technology since 2010

Heat pump CO₂ emissions ratio vs natural gas boiler per unit of heat



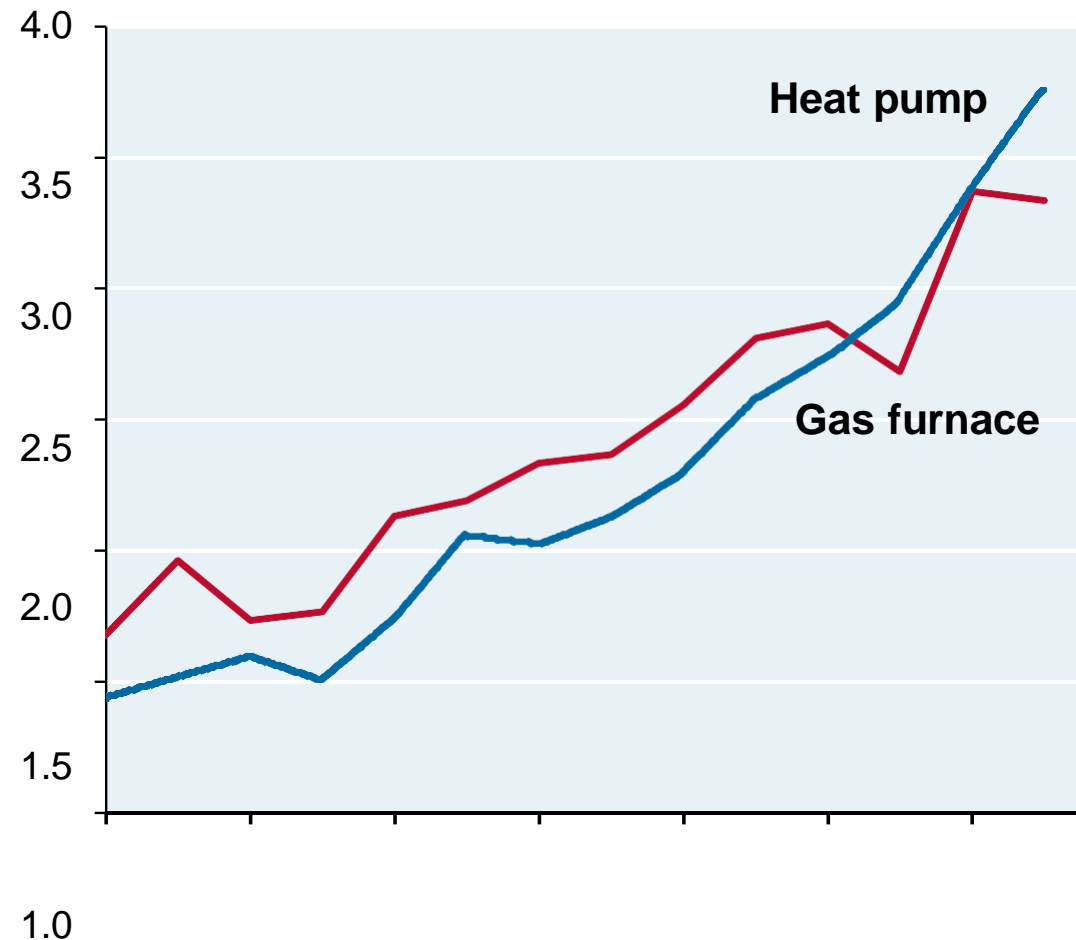
Source: IEA Heat Pumps Tracking Report. September 2022.

15 mph
Moderate breeze

Decarbonization of winter heating; time and money/subsidies

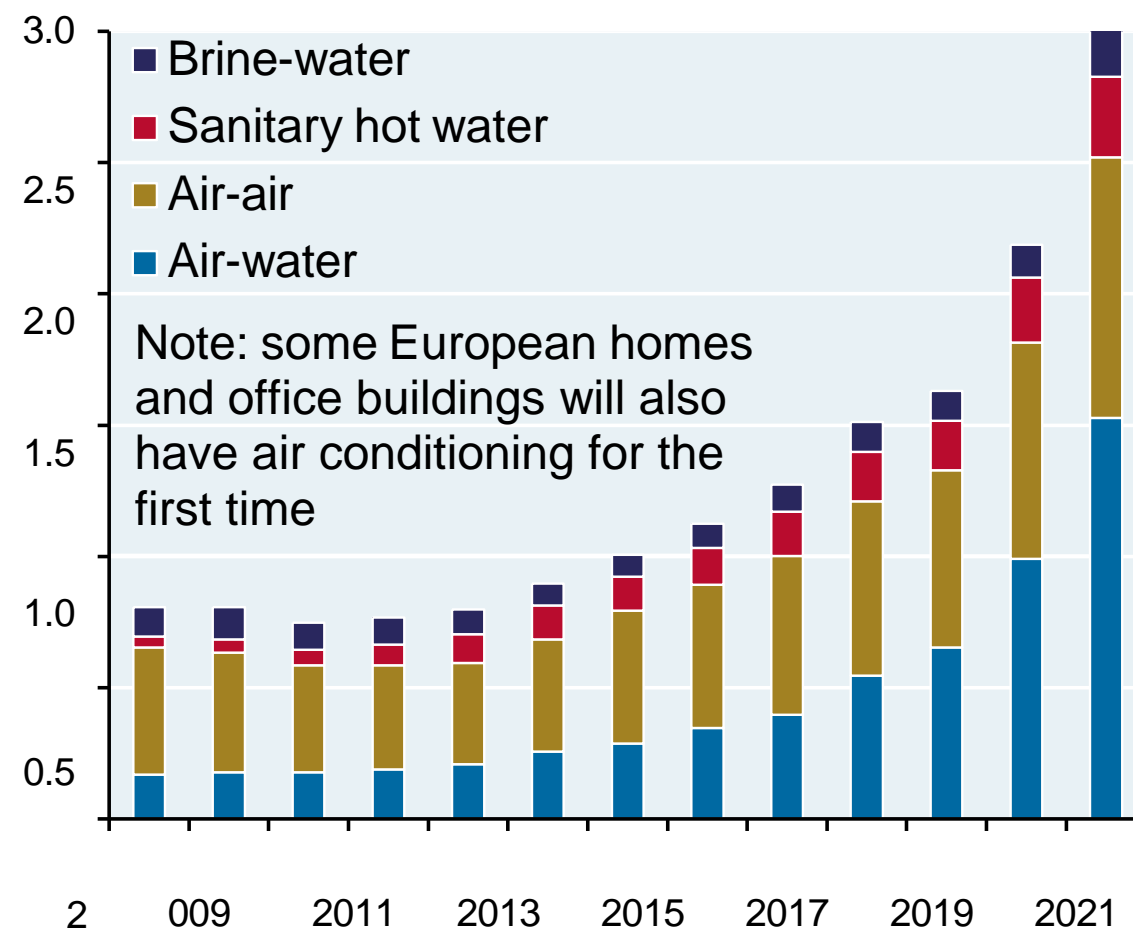
US heat pump sales exceed gas furnace sales

Annual sales, millions



European heat pump sales reach 3 million units

Annual sales, millions



0.0

'21 '22

'10

'11

'12

'13

'14

'15

'16

'17

'18

'19

'20

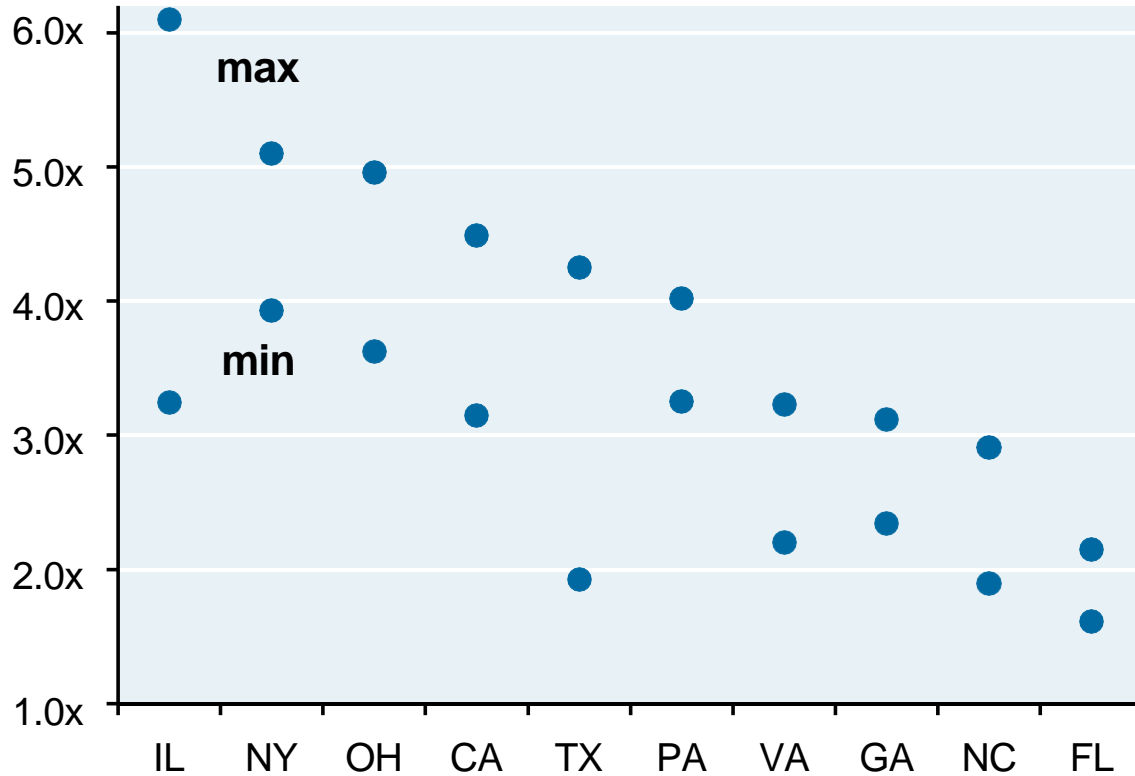
Source: Air Conditioning, Heating & Refrigeration Institute. 2022.

Source: European Heat Pump Association. February 2023.

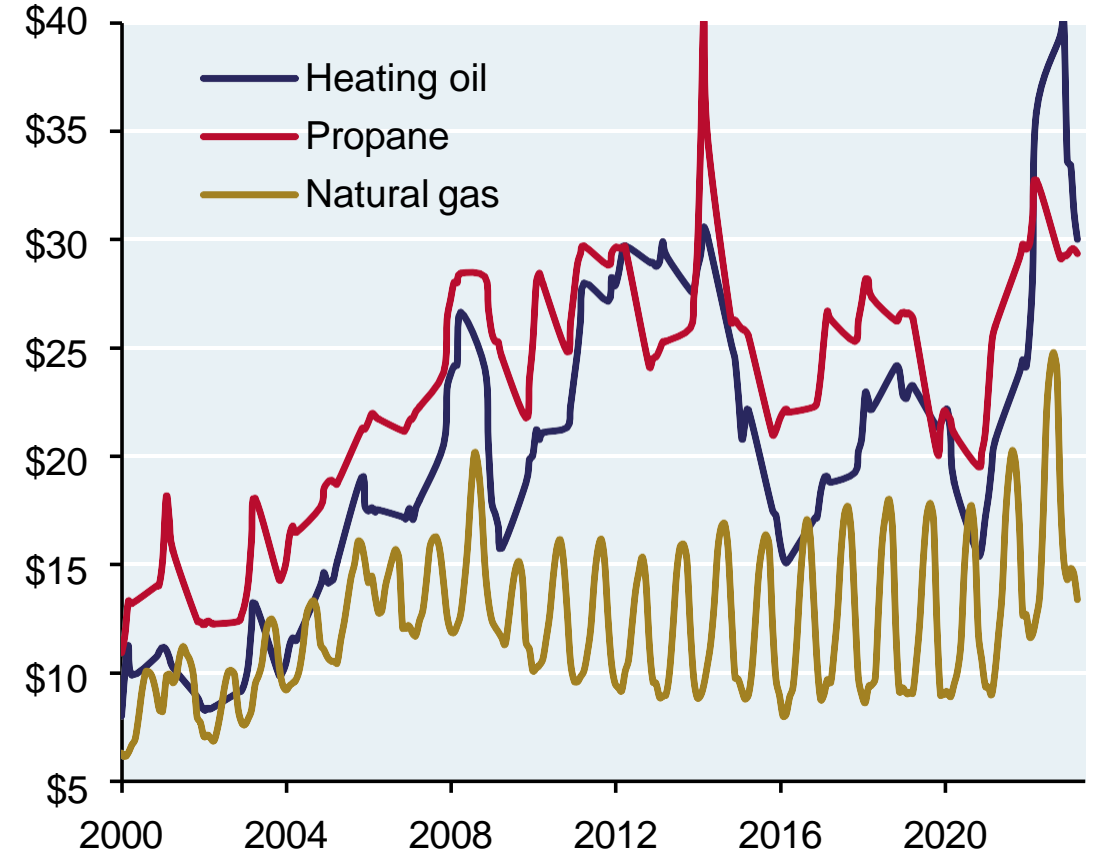
15 mph
Moderate breeze

Heat pumps are a lot more efficient, but electricity costs a lot more than natural gas

US electricity costs 2x to 5x more than natural gas, Residential electricity price / MJ divided by residential natural gas price / MJ, measured over last four winters



Natural gas is a lot cheaper than propane or fuel oil, US\$ per million BTU, residential pricing



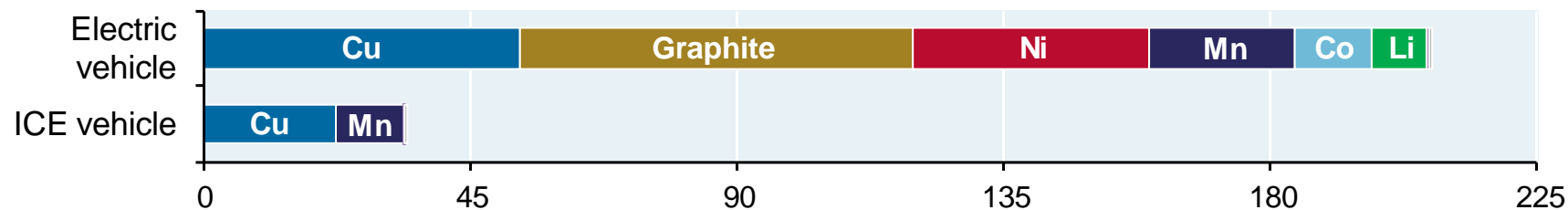
Source: EIA, JPMAM. 2023. Top 10 states by elec. consumption.

Source: EIA, JPMAM. March 2023.

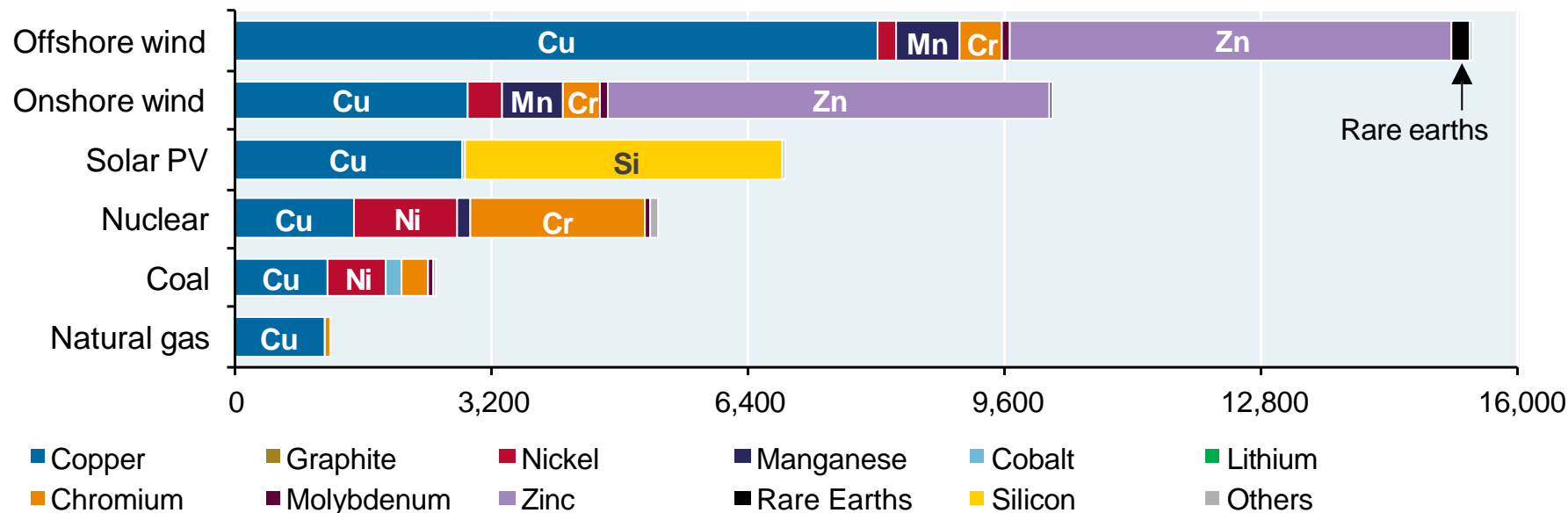
Critical minerals

Minerals used in wind / solar / EVs vs legacy energy systems

kilograms of minerals per vehicle



kilograms of minerals per megawatt of electricity generation capacity



Source: IEA, JPMAM. 2022.

15 mph
Moderate breeze

Transition minerals are generally abundant *geologically*...

Transition minerals are generally abundant

<i>figures in kilotonnes</i>	Global production	Global reserves	Global resources	Yrs of prod vs reserves	Yrs of prod vs resources
Lithium	130	26,000	98,000	200	754
Copper	22,000	890,000	2,100,000	40	95
Cobalt	190	8,300	25,000	44	132
Nickel	3,300	100,000	300,000	30	91
Manganese	20,000	1,700,000	NA	85	NA
Chromium	41,000	560,000	12,000,000	14	293
Zinc	13,000	210,000	1,900,000	16	146
Rare earths	300	130,000	NA	433	NA
Iron ore	1,600,000	85,000,000	230,000,000	53	144
Platinum grp	0.40	70	100	175	250
Graphite	1,300	330,000	800,000	254	615
Molybdenum	250	16,000	25,400	64	102

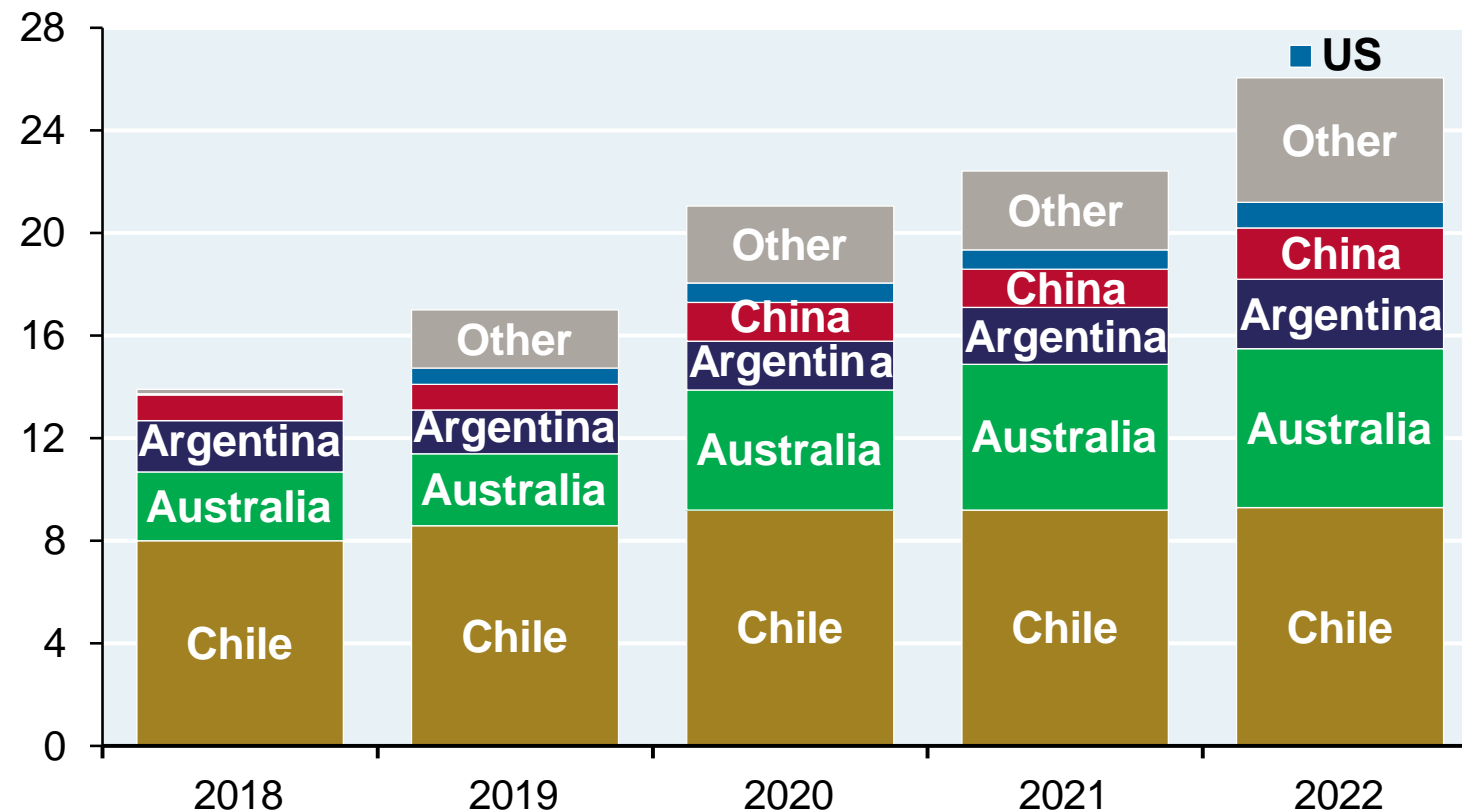
The table excludes silicon, which is the second most abundant element in the earth's crust. World resources of limestone and dolomite are also plentiful. Iron ore data refers to iron content rather than crude ore. Platinum group refers to palladium and platinum. Source: USGS, JPMAM. 2022

15 mph
Moderate breeze

...and proven reserves rise once people start looking for them

Estimated global lithium reserves grew by 87% in 4 years

Million metric tons



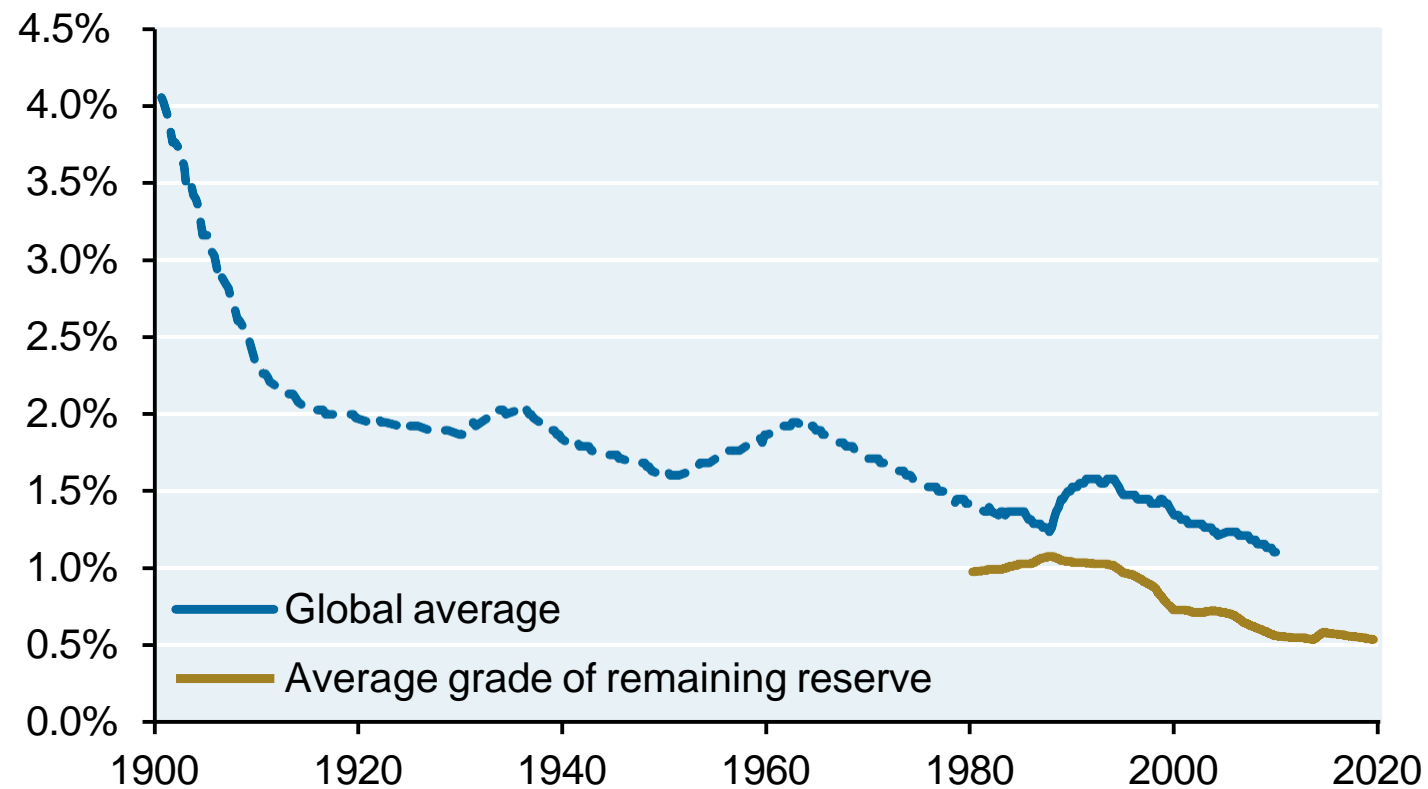
Source: USGS, JPMAM. 2023.

25 mph
Strong breeze

The iron law of declining ore grades

Copper ore grades

Percent of rock mass mined



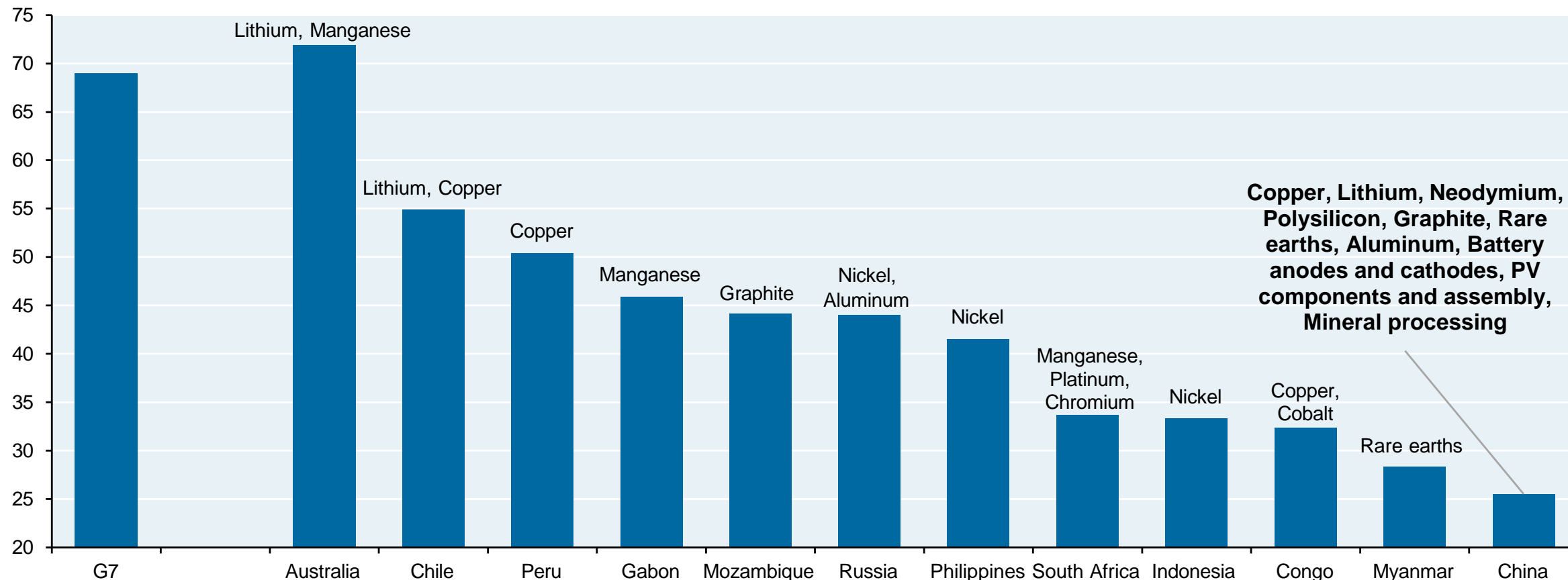
Source: Wood McKenzie, Bernstein, G&R, Lulea University (Sweden). 2021.

35 mph
Gale

Critical minerals: cost, supply chain and domestic production challenges

Transition minerals are generally sourced and processed in countries with poor environmental protections and a lot of corruption

Index, environmental health score (75%) + corruption score (25%)



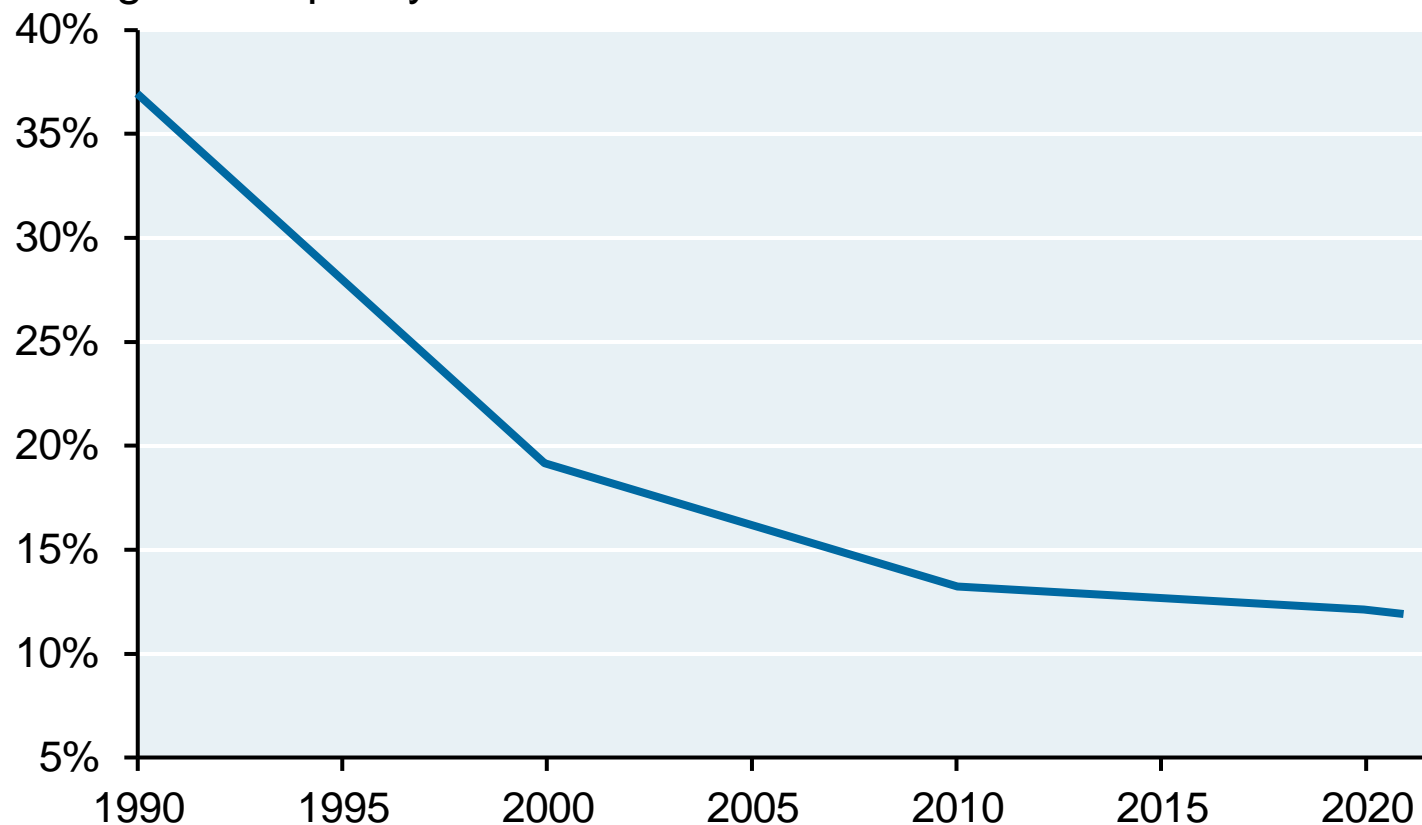
Environmental health: PM 2.5, NO_x, SO₂, CO, heavy metals, ozone, lead, drinking water, biodiversity, etc
Source: Yale EPI Environmental Index, Transparency International, JPMAM. 2023.

Let's be realistic about how long it will take to build new supply chains, and what they will cost

TSMC estimates chips will cost 2x in Arizona vs Taiwan

US semiconductor manufacturing capacity

% of global capacity



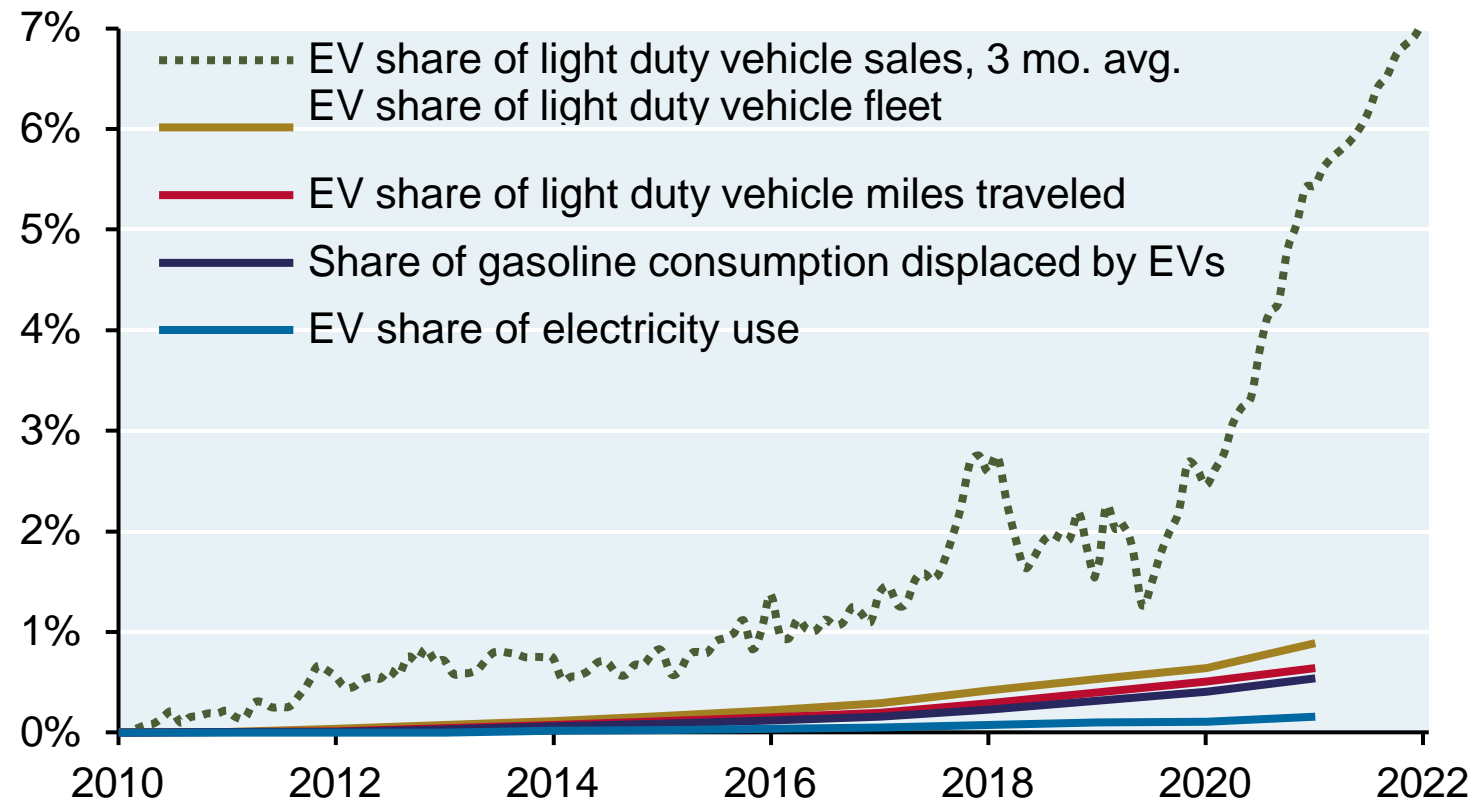
Source: SIA, Bloomberg. February 2021. Dotted lines represent estimates

25 mph
Strong breeze

Long operating lives of existing cars...

US electric vehicle shares

Percent



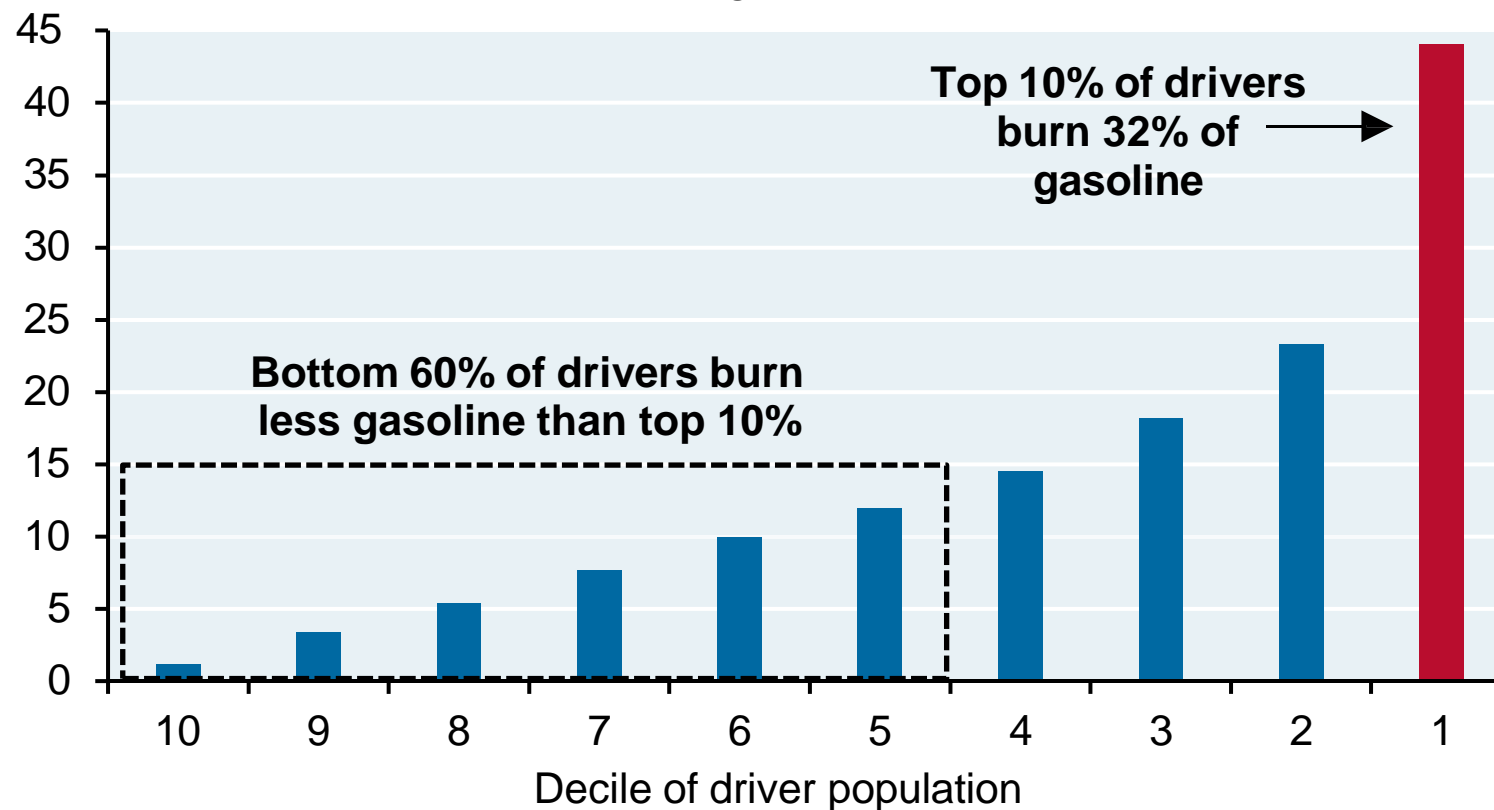
Source: ANL. 2022.

25 mph
Strong breeze

...and who drives them. How about a subsidy per gallon of displaced gasoline?

The US gasoline super-users

Gasoline consumption, billions of gallons



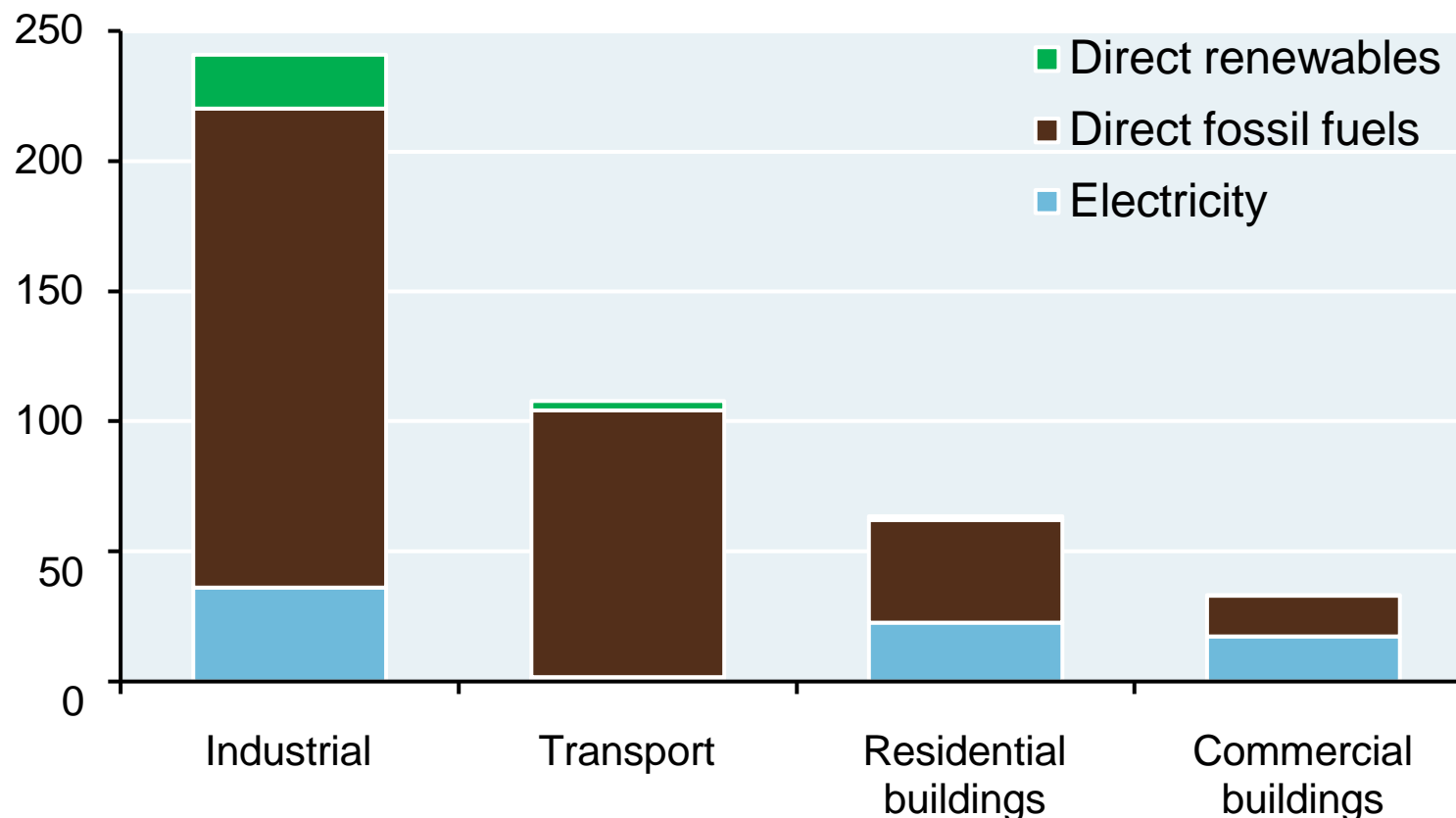
Source: Coltura. July 2021.

35 mph
Gale

Industrial energy use

Global final energy consumption by sector and fuel

Quadrillion BTUs of final energy consumed by sector



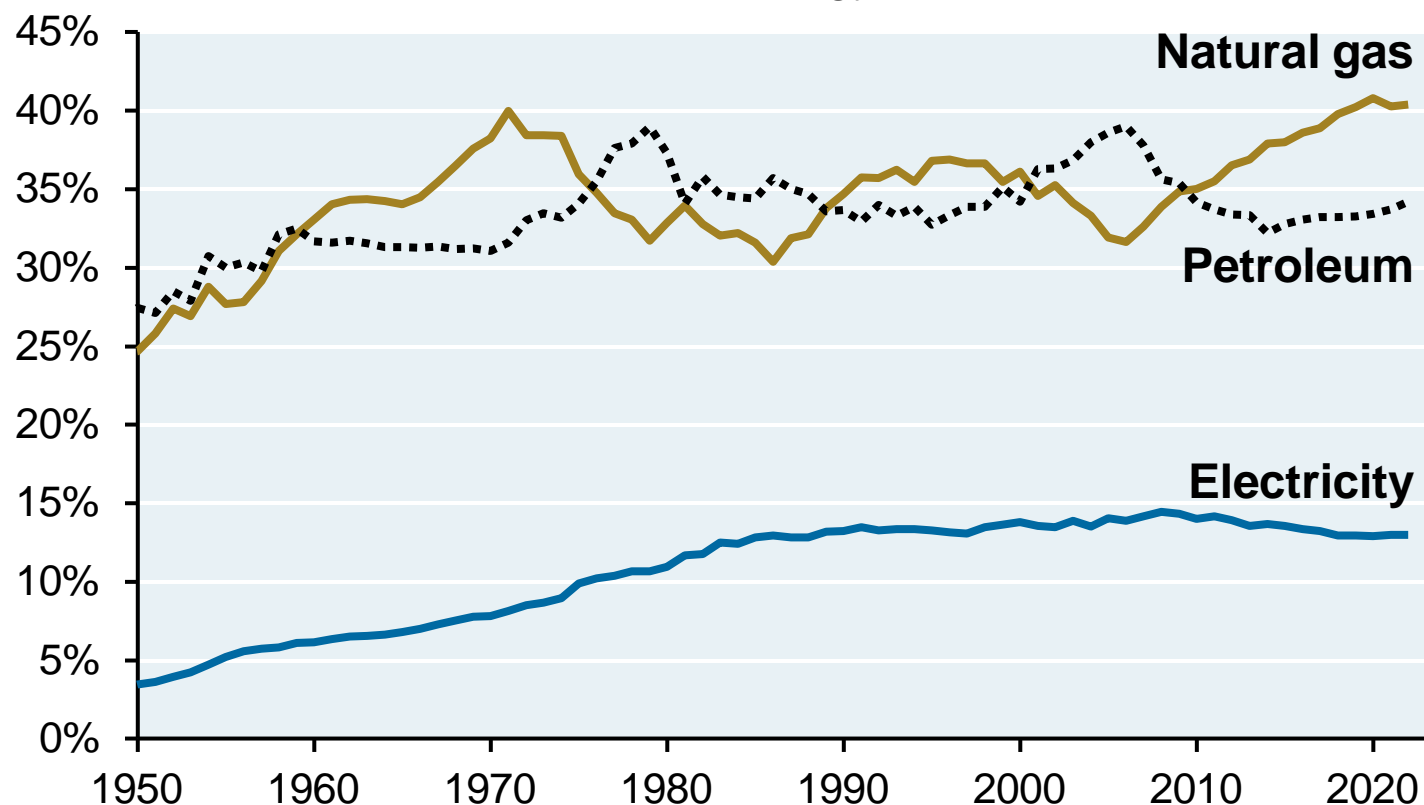
- Steel
- Plastics
- Cement
- Ammonia/fertilizer
- Glass
- Rubber
- Pulp/Paper
- Other chemicals

Source: Energy Information Administration, JPMAM. 2021.

35 mph
Gale

US electrification share unchanged since 1980

Electricity share of US industrial energy use unchanged for decades, Share of industrial energy use



Source: EIA. January 2023.

Electrification replacement of process heat

- Loss of waste heat
- Harder to do with non-conductive materials
- Electricity per MJ costs 1.5x-4.5x more than natural gas for industrial heat @85% efficiency

Opportunities

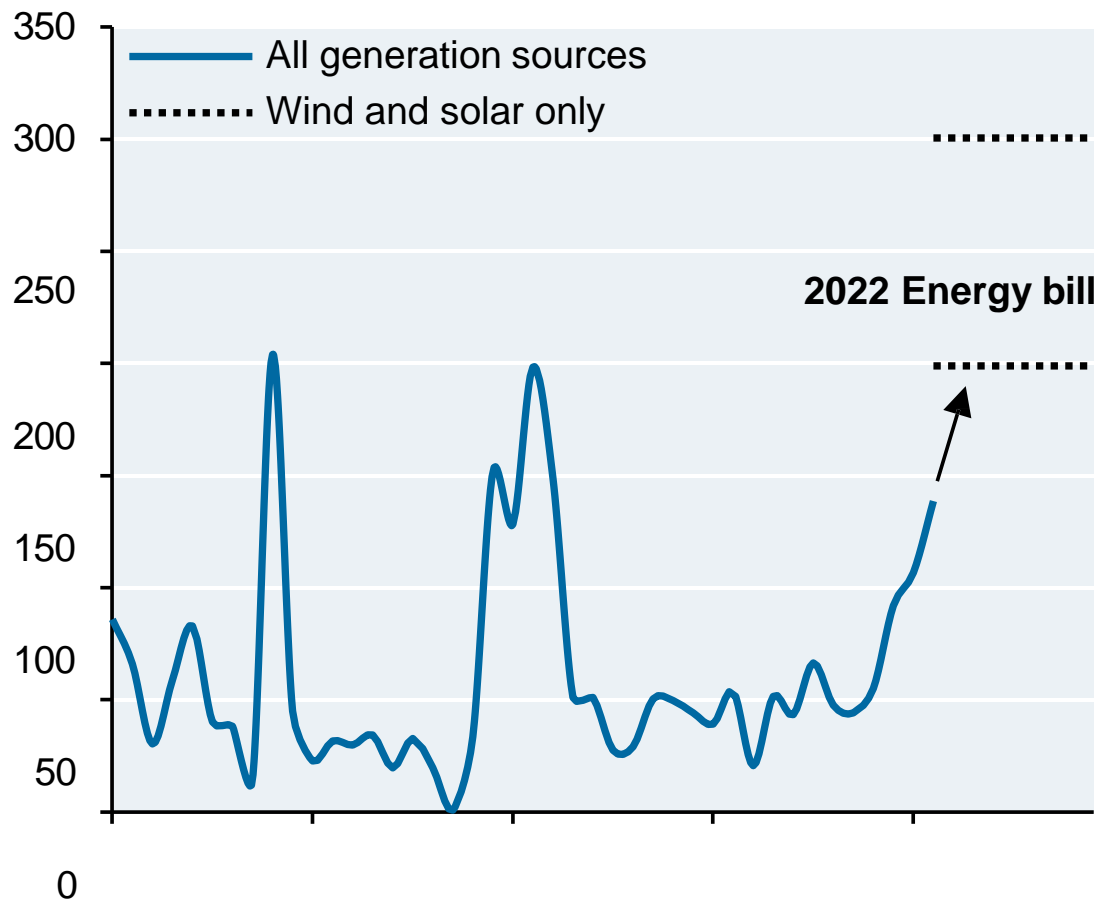
- 25% of industrial heat < 100°C
- Industrial heat pumps for drying, pressing, sterilizing, staining and steaming

35 mph
Gale

The Wind and solar Manhattan project is achievable...

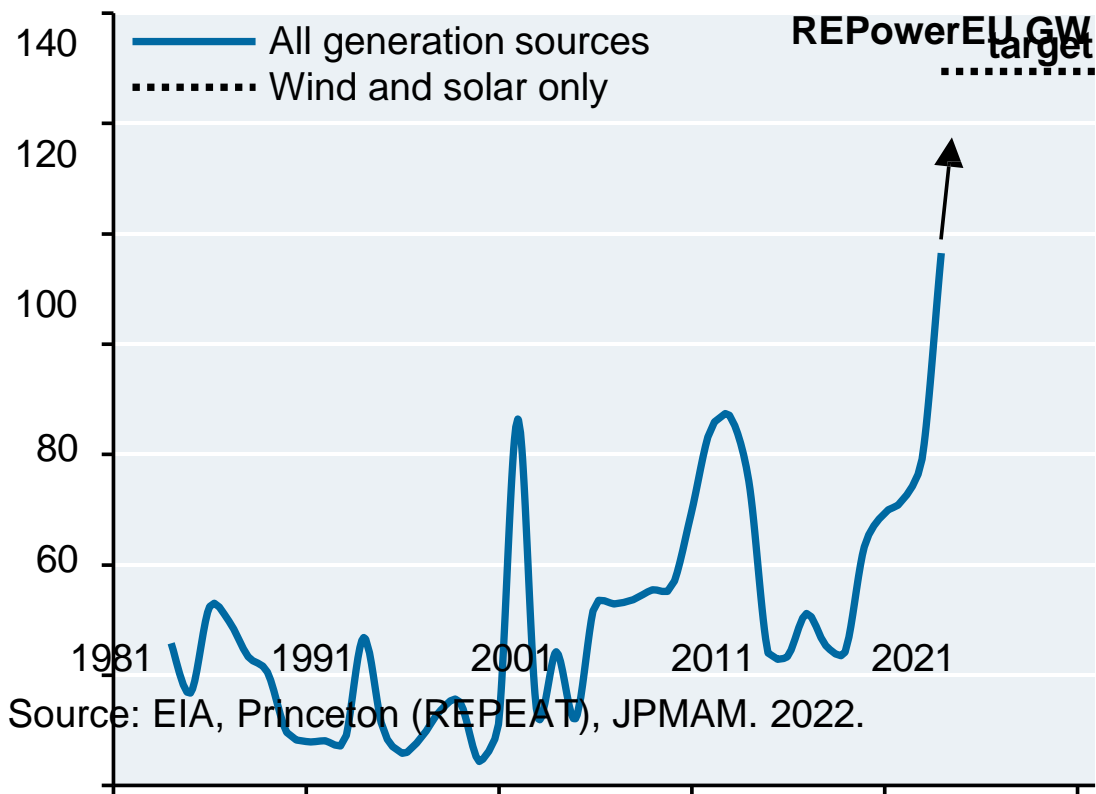
US capacity additions and projections

Gross electricity capacity additions, watts per yr. per capita

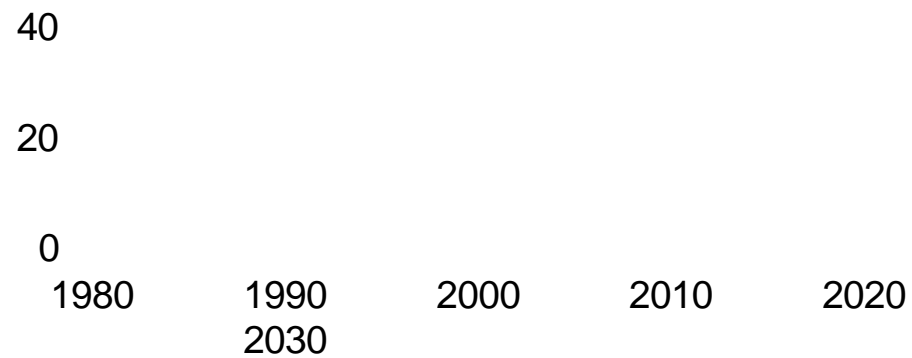


EU capacity additions and projections

Gross electricity capacity additions, watts per yr. per capita



Source: EIA, Princeton (REPEAT), JPMAM. 2022.



Source: European Commission, EIA, JPMAM. 2022.

35 mph
Gale

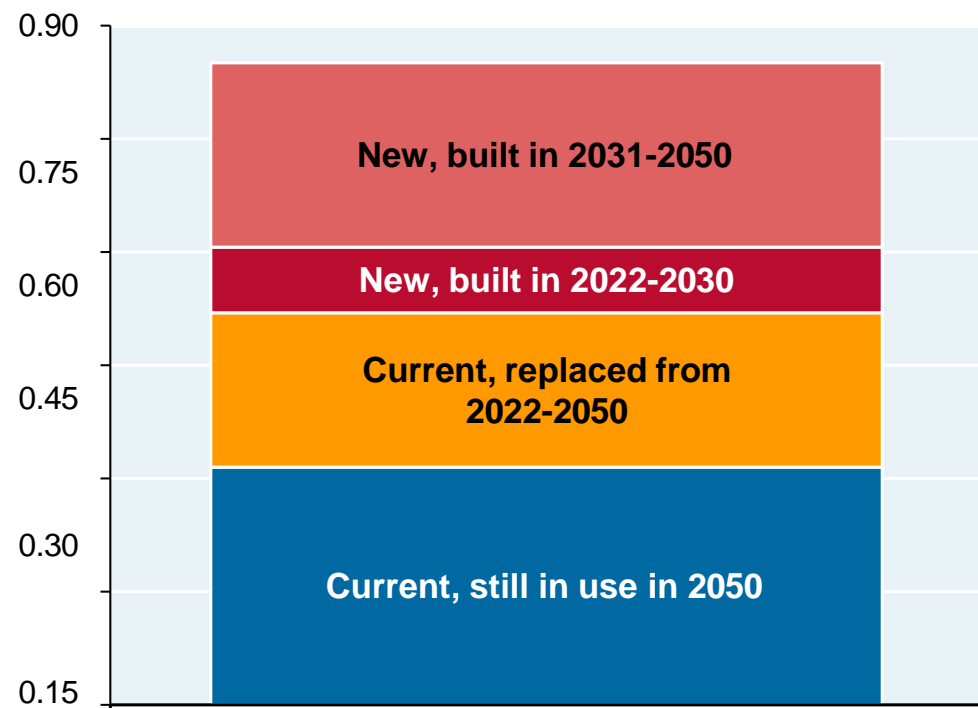
...until you have to connect it to the grid

Energy Transmission Commission:

- 55:45 split between required spending on generation and spending on transmission, distribution and storage

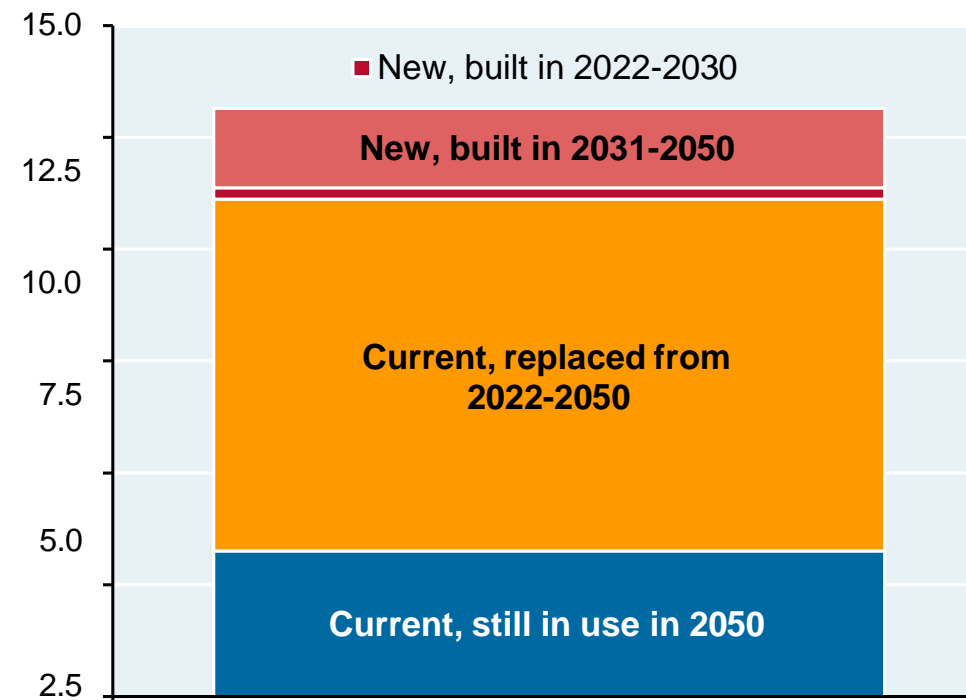
US transmission grid development

Kilometers, millions



US distribution grid development

Kilometers, millions



0.00

Source: IEA, JPMAM. 2022.

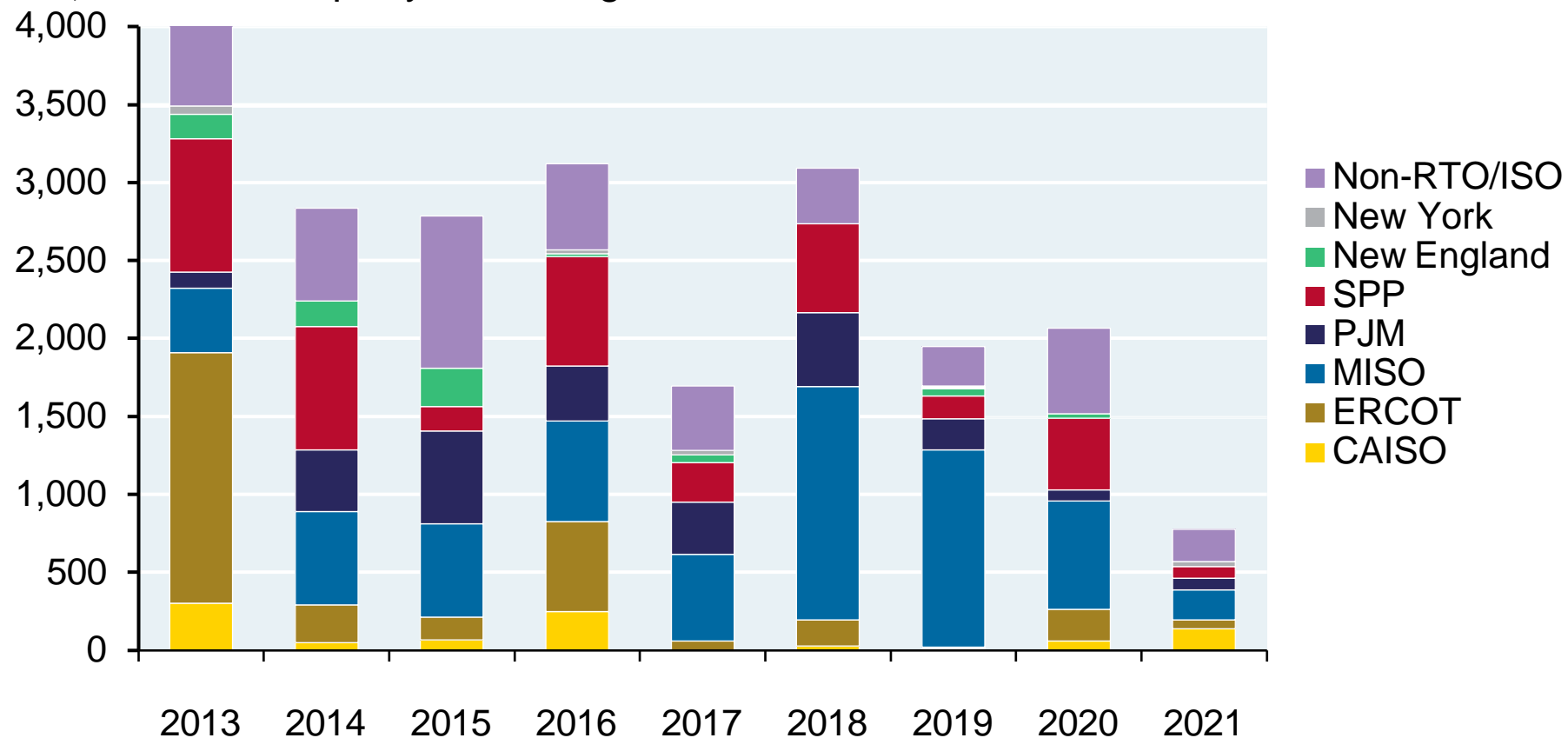
0.0

Source: IEA, JPMAM. 2022.

35 mph
Gale

The facts on the ground

Recent transmission line growth has declined from 1.5% to 1.0%, Miles added per year, total grid size = ~200,000 GW-miles



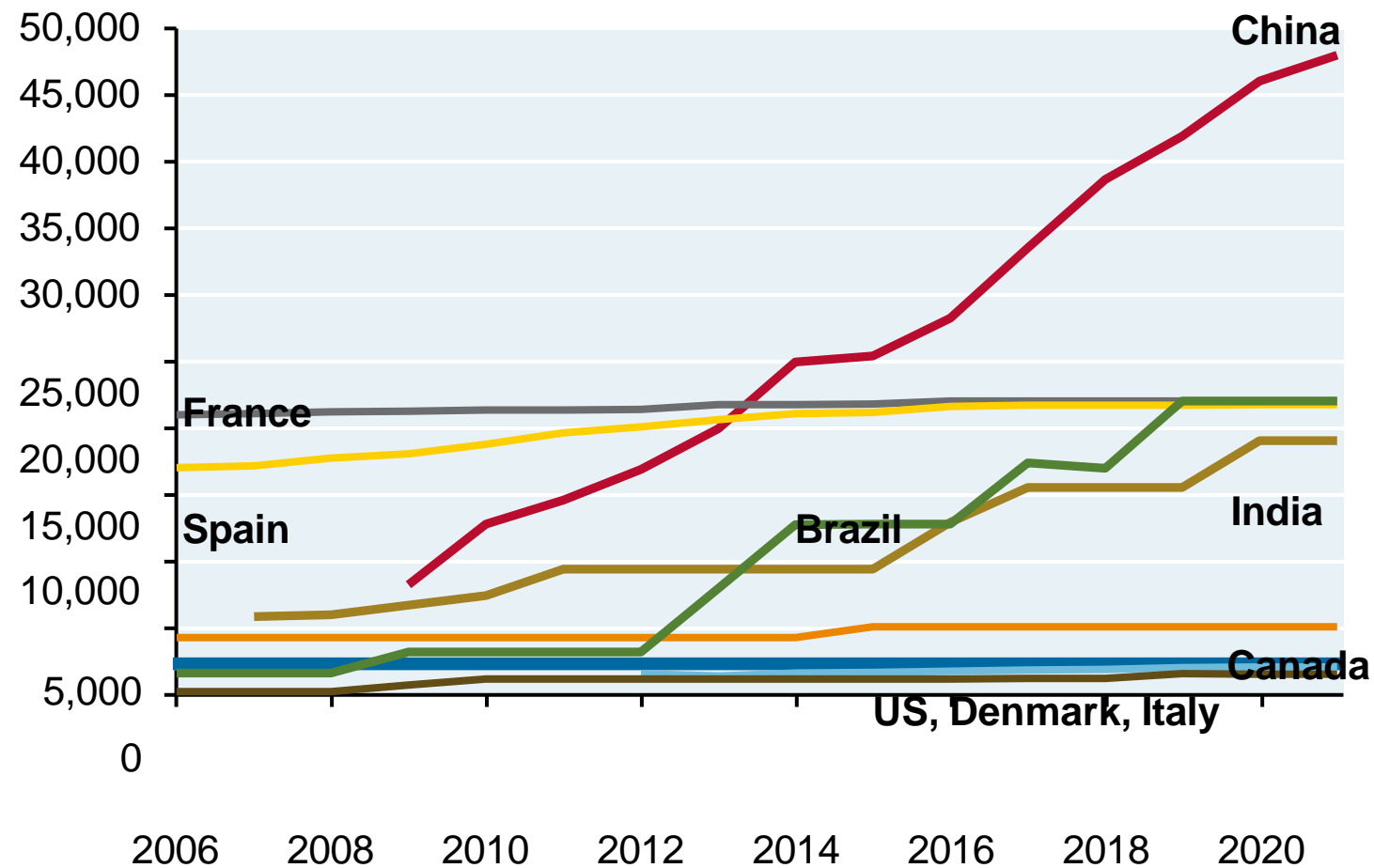
Source: S&P Global, JPMAM. 2022. Note: Transmission lines > 100 kV.

35 mph
Gale

High voltage direct current lines

HVDC Growth

Total kilometers of 400+ kV lines



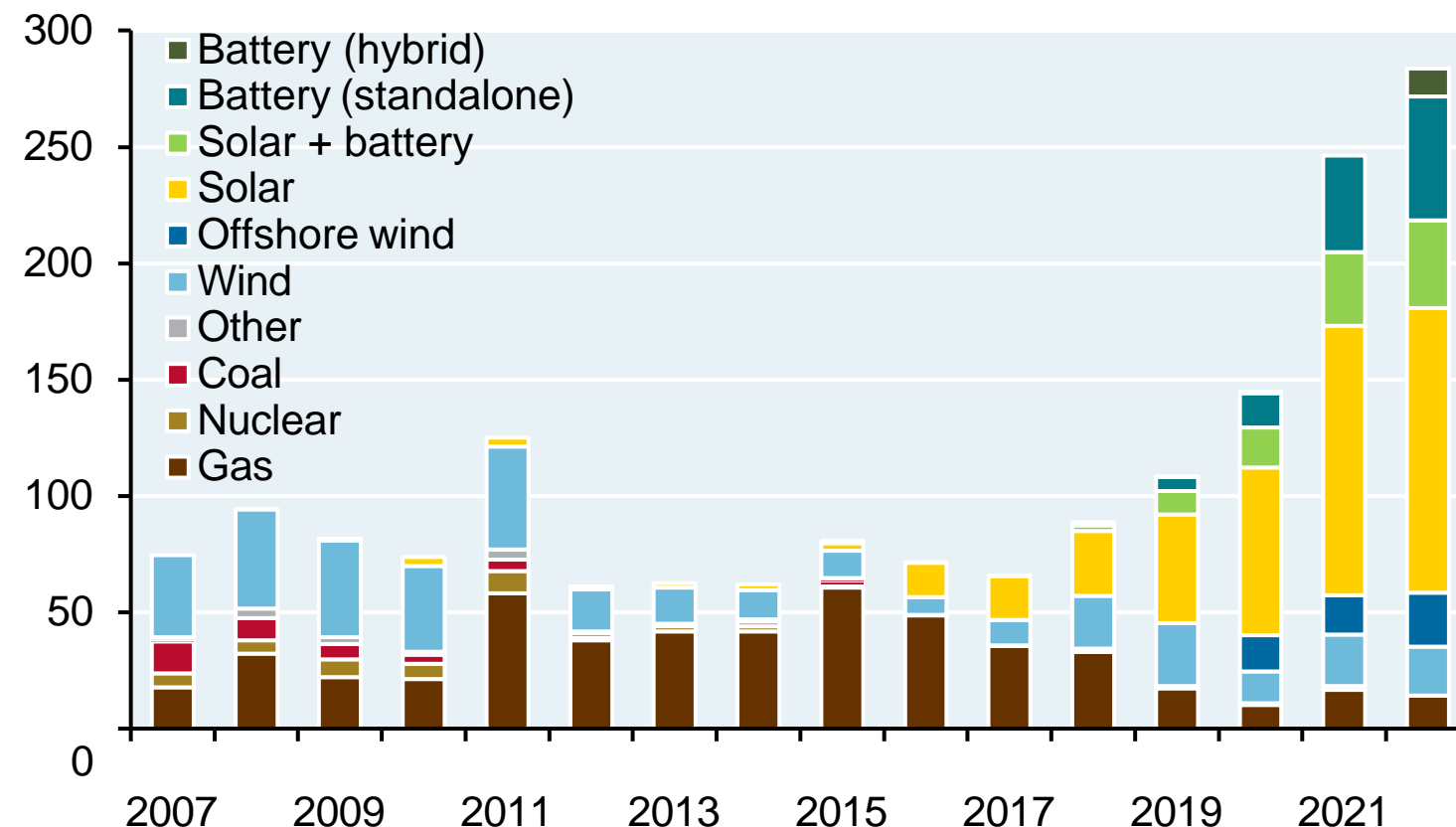
Source: Global Transmission Report, JPMAM. 2022.

35 mph
Gale

The queue

The clogged PJM interconnection queue

Cumulative gigawatts of capacity in the queue



Europe:

- UK supplier asking for grid connection is currently told sometime between 2030 and 2038
- National Grid estimates that 80% of the queue might be made up of flippers with no project designs, funding or engineers
- Ultranet in Germany required 13,500 separate permits

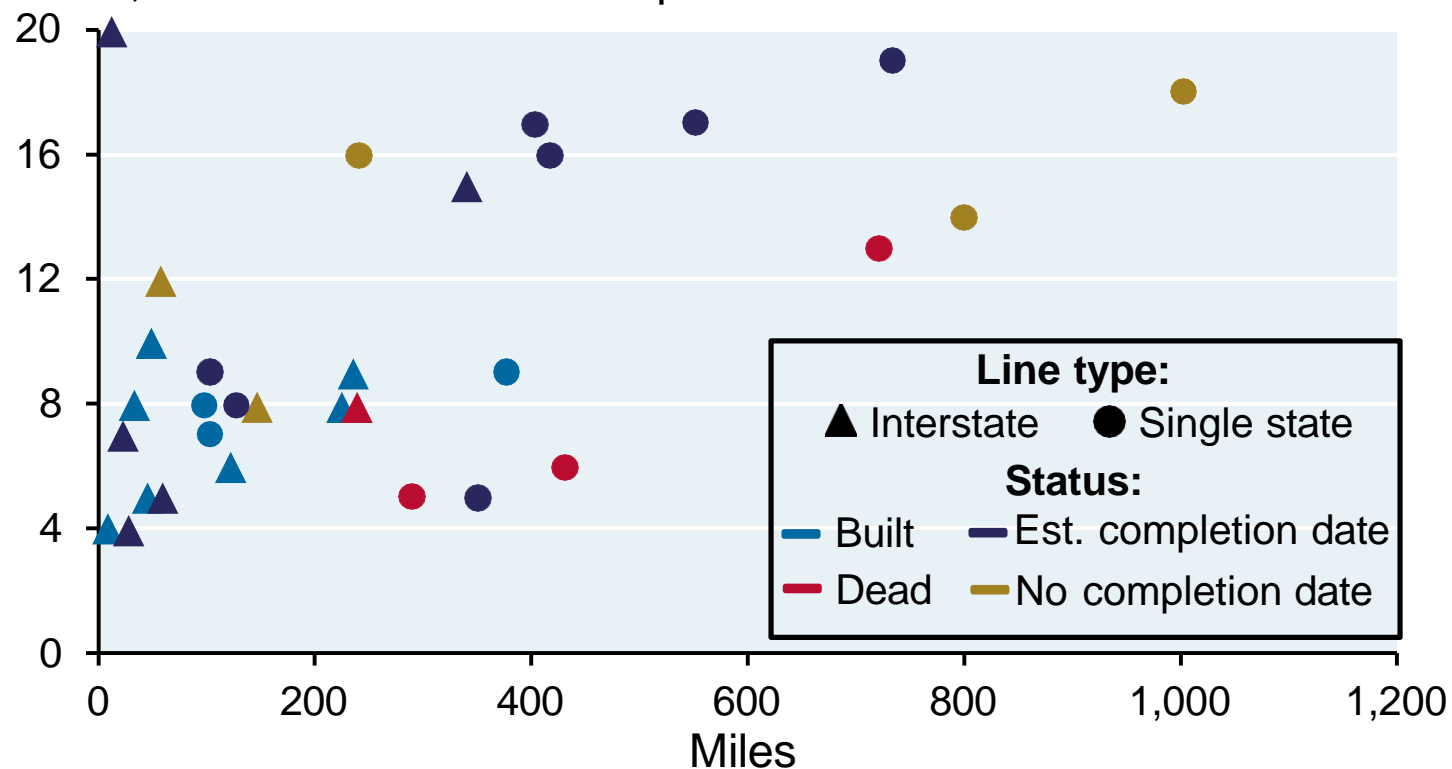
Source: Lawrence Berkeley National Lab. 2022.

35 mph
Gale

500+ mile projects (from Scottsdale to Fresno) take 12-20 years to complete

US transmission lines: length vs time to completion

Years, estimated or actual completion time



- Maine jury found that Avangrid was acting in good faith when it spent \$450 mm on the New England Clean Energy Connect Line in advance of a local referendum
- After 17 years, Transwest Express (Wyoming wind to Nevada/California) will finally begin
 - 85% on public lands

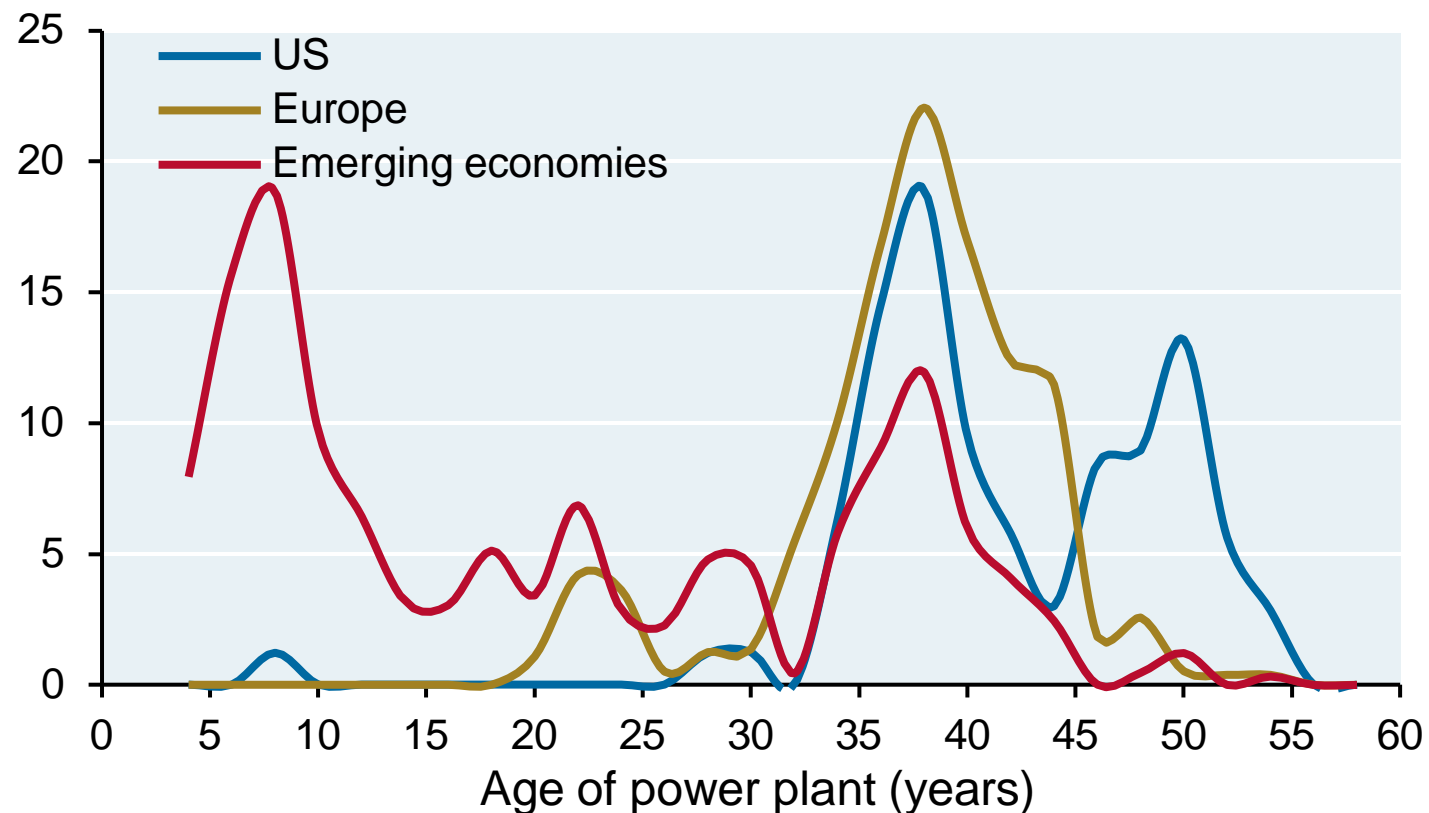
Source: "The Challenges of Decarbonizing the U.S. Electric Grid by 2035", Moch & Lee (Harvard). February 2022.

**50 mph
Storm**

Nuclear power

Age distribution of existing nuclear reactors

GW of capacity



Source: International Atomic Energy Agency, JPMAM. 2022.

Nuclear power update

Cost

- 2013 Carnegie Mellon survey of industry practitioners: \$4,000 to \$6,000 per kW
- Flamanville France: \$125-135 per MWh and \$8,600 per kW
- Georgia Vogtle: \$15,200 per kW

SMRs

- NuScale Idaho costs revised up to \$89 per MWh and \$20,000 per kW, higher than Georgia plants and 4x estimates from 3 years ago
- Westinghouse: construction by 2030, operating by 2033; AP300 same as AP1000 in Georgia
- Smaller scale argument is odd given economies of scale everywhere else
- Fierce debates about nuclear waste intensity compared to existing reactors

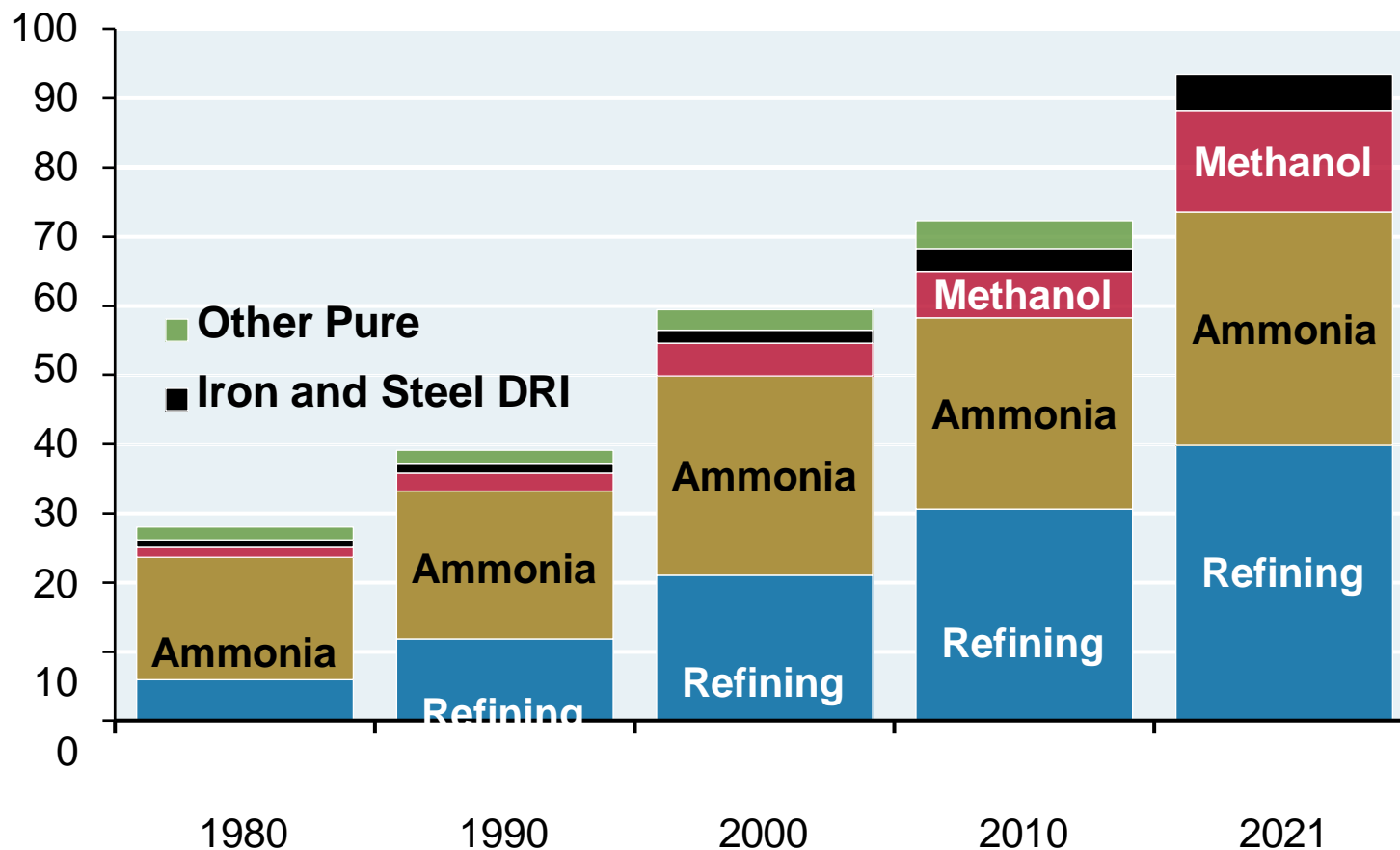
Terrapower delays related to HALEU supply

50 mph Storm

Hydrogen

Global annual production of hydrogen since 1980

Million metric tons

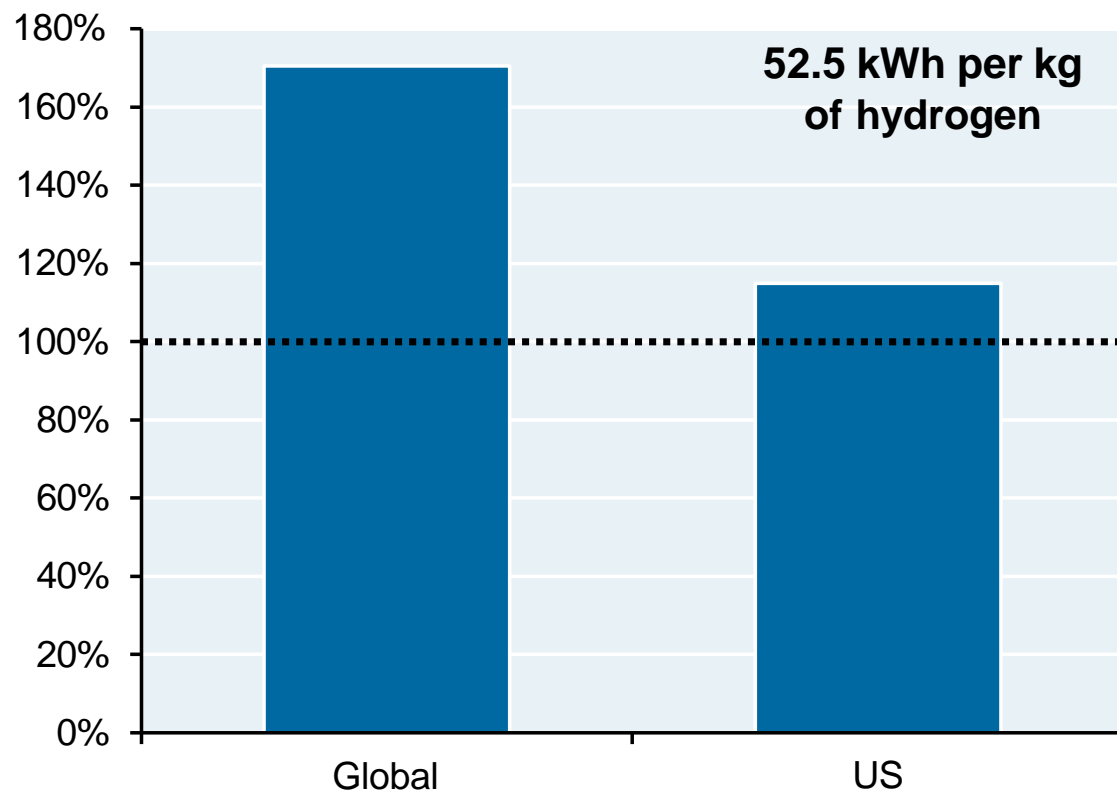


Source: IEA. 2022.

50 mph
Storm

What would it take to replace brown hydrogen with green electrolyzed hydrogen?

Percentage of electricity generation required to replace brown hydrogen with green hydrogen



Next Era:

- 100 MW electrolyzer powered by 450 MW of dedicated renewable energy = ~16,000 metric tons of hydrogen per year
- Assuming: 159 metric tons of H₂ per year from a 1 MW electrolyzer @ 100% utilization
- ~750 plants of this kind would be needed to substitute US brown H₂ production with green H₂

Source: JPMAM calculations, BP Statistical Review of World Energy, IPST, NREL, IEA, NextEra. 2023.

Hydrogen production and transportation

Green H₂ production

- Intermittent renewable energy is suboptimal for capital intensive electrolyzers
- If all existing hydrogen were created using **methane pyrolysis**, carbon black created would be ~270 million metric tons, **1-2 orders of magnitude larger than demand for carbon black today**

Blue H₂ production

- High CO₂ capture rate + downstream capture from hydrogen purification + low methane leakage rate + enough renewable energy to run CCS process + proximity to permeable reservoir

H₂ transportation

- No hydrogen storage solution combines high energy density, low energy input and ability to store and handle easily
- Ammonia: existing distribution network, stored at higher temperatures but **less than 20% hydrogen**
- **Liquid organic hydrogen carriers** require energy for storing/releasing hydrogen; hydrogen density is low at 6.2% by weight; need to return the “carrier” molecules back to the point of production

Why hydrogen?

Hydrogen use cases: a lot more questions than answers

50 mph
Storm

H₂ consumption

- Trucking? Probably the best use case but commercialization pending
- Backup grid power? Intermittent renewable power not ideal for H₂ production, energy penalties
- Shipping? Safety, green ammonia round trip efficiency of 10%-20%
- Rail? Most passenger and freight rail already electrified, other than in the US
- Hydrogen blending? Pipeline embrittlement issues, limited emissions reduction at very high cost
- Cars? Fuel cell vehicle uses ~25% of the energy it starts with due to the energy losses from AC/DC conversion, electrolysis, compression, transport and fuel cell; not much of a range benefit vs BEVs
- Steel? DRI-EAF is feasible; however, long lives of existing steel plants, 50% in China
- Home heating? Heat pumps make more sense
- Aviation? Safety, fuel tank space requirements (jet fuel has 6x more energy than pressurized hydrogen)

Synthetic fuels are expensive

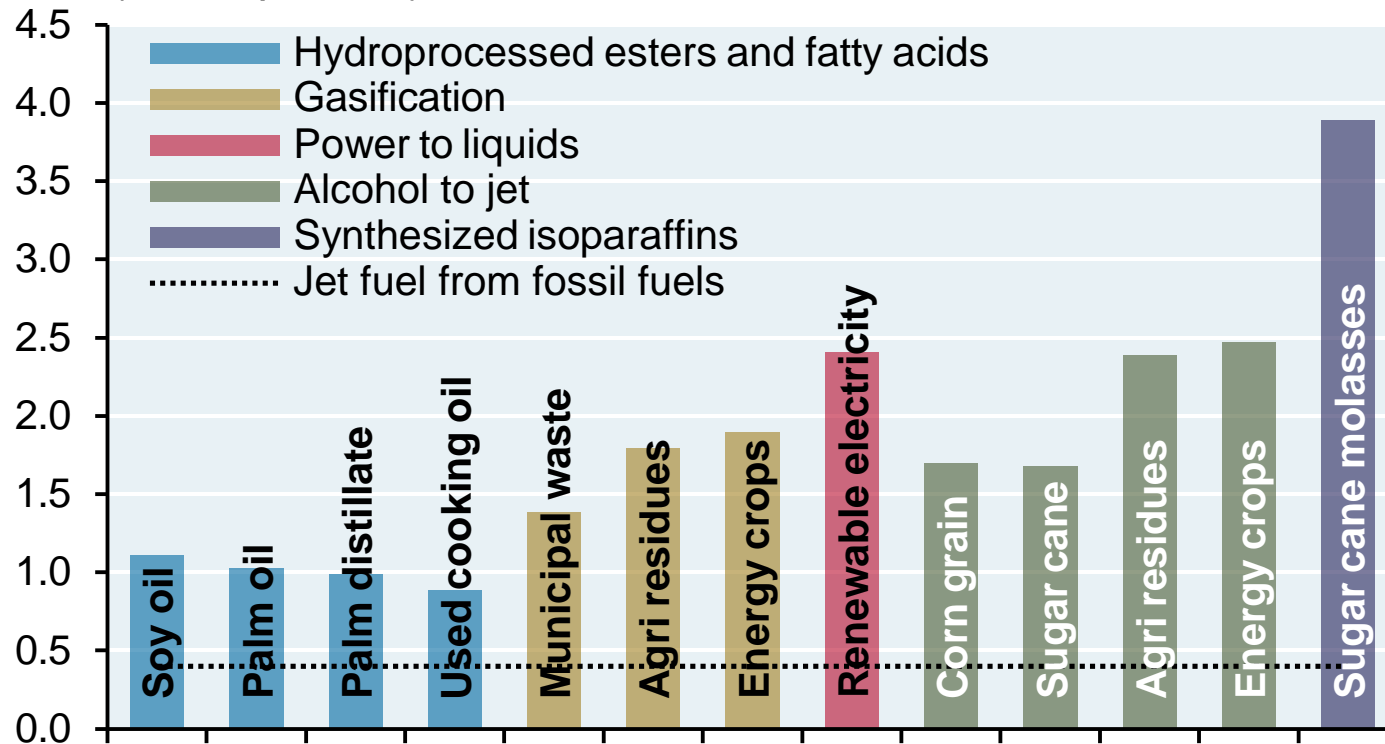
15 mph
Moderate breeze



35 mph
Gale

Renewable jet fuel cost estimates

Cost (Euros per liter)



Source: Royal Society Policy Briefing. February 2023. Energy crops include oilseed, miscanthus and poplar.

Challenges with some biomass:

- Poor energy density
- High transport costs
- High moisture content
- Intermittent supply

Challenges with landfill waste:

- Counterfactual: plastics and other non-biogenic waste typically release methane through aerobic decomposition very slowly, over 200-1000 years

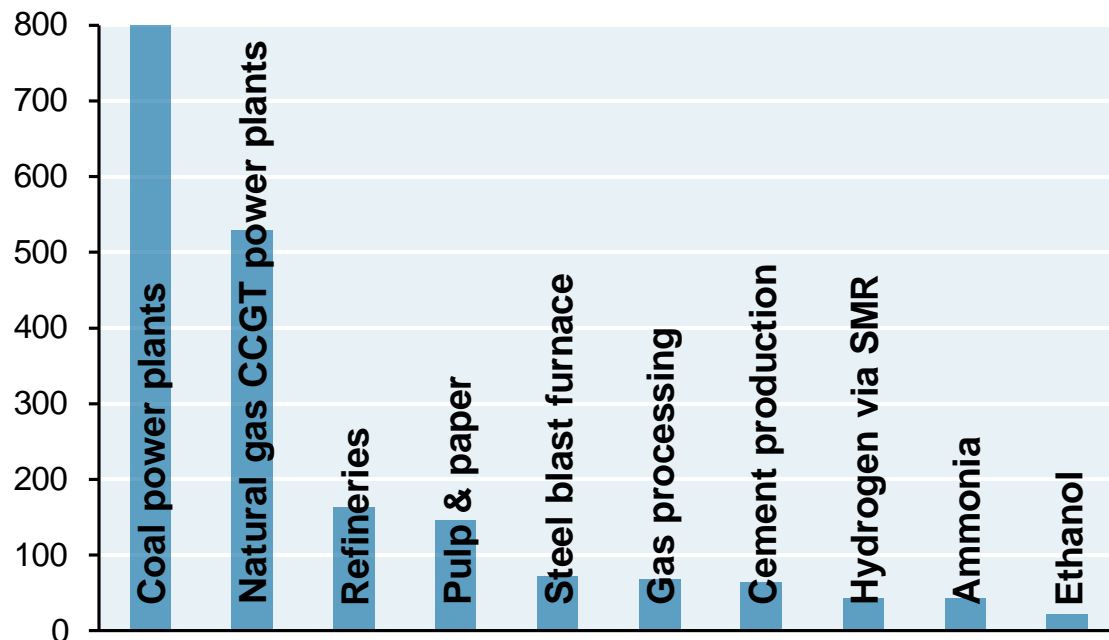
Steel mill top gas fermentation to ethanol: not biogenic at all

25 mph
Strong breeze

CCS: low CO₂ concentrations in high volume industrial flue gas

Annual US GHG emissions from industrial sector

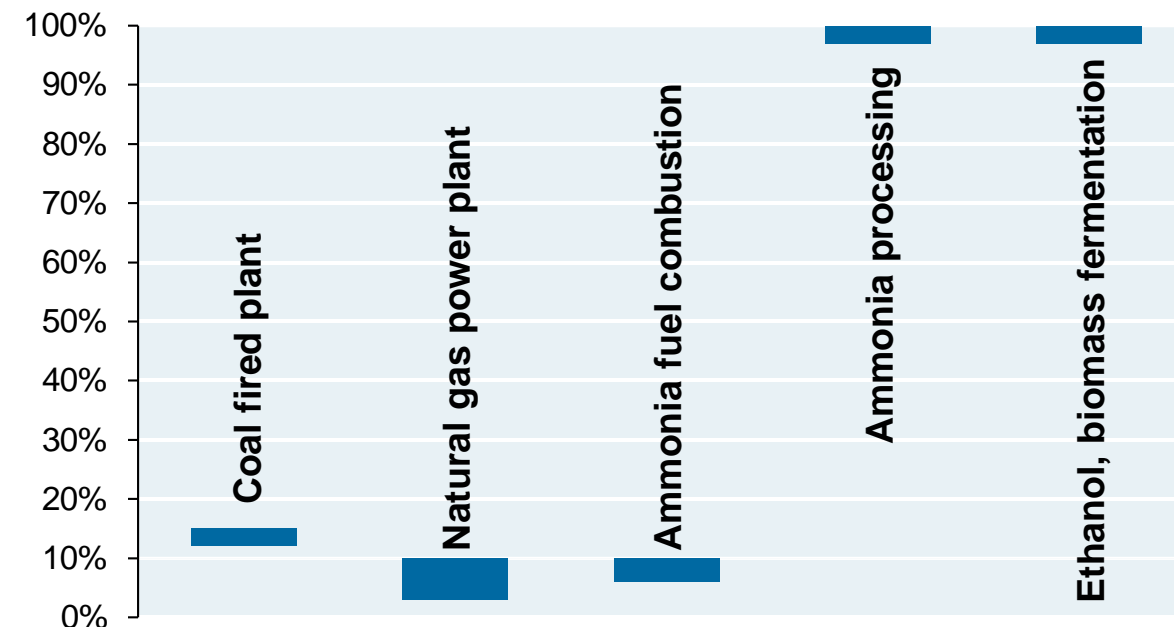
Million tonnes of CO₂ equivalent



Source: Energy Futures Initiative. February 2023.

CO₂ concentration in flue gas streams

Percent by volume

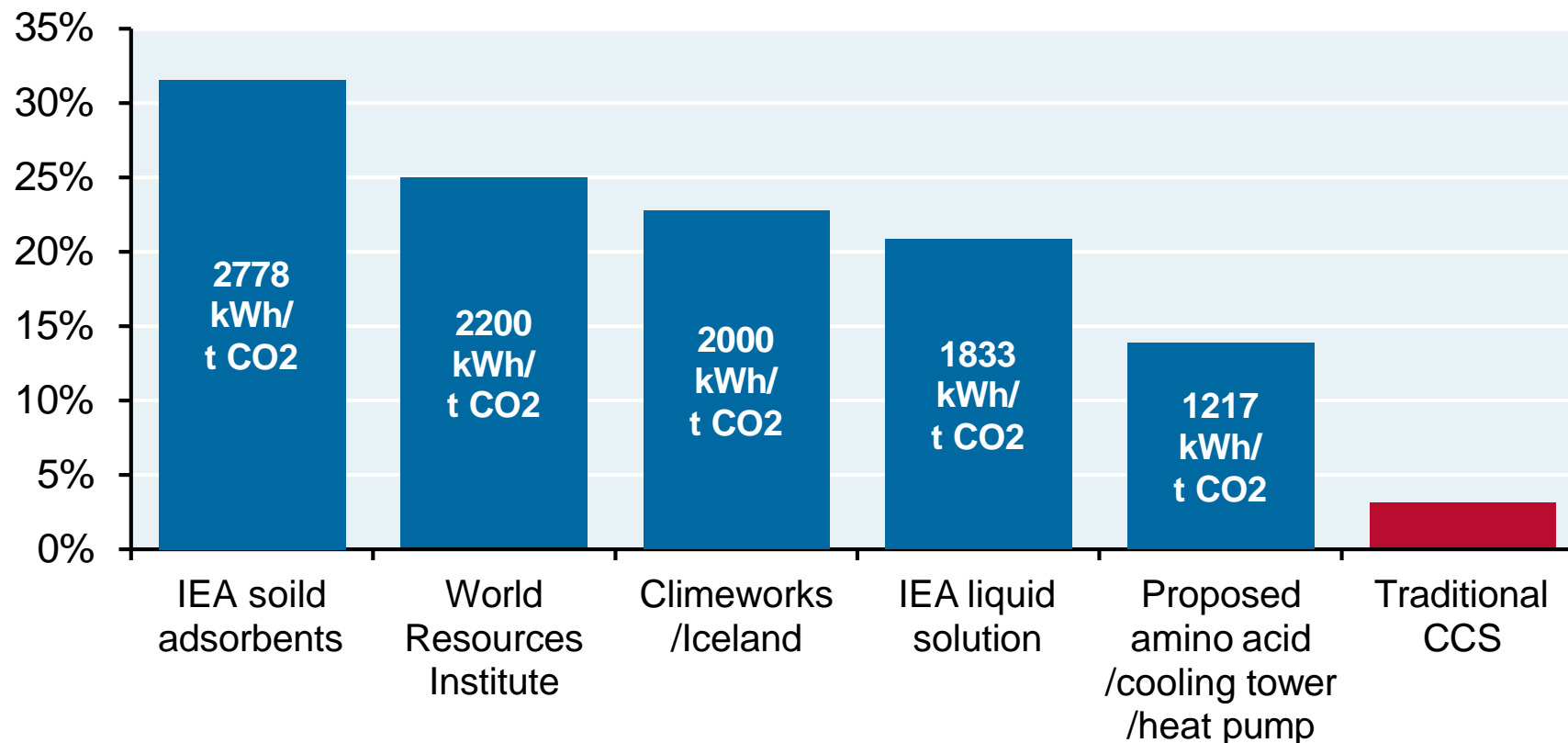


Source: IPCC, Swedish Env. Research Institute, Penn State, JPMAM. 2022.

50 mph
Storm

Direct Air Carbon Capture is very energy intensive

DACC electricity requirements to sequester 10% of US CO₂ emissions, Share of US electricity generation



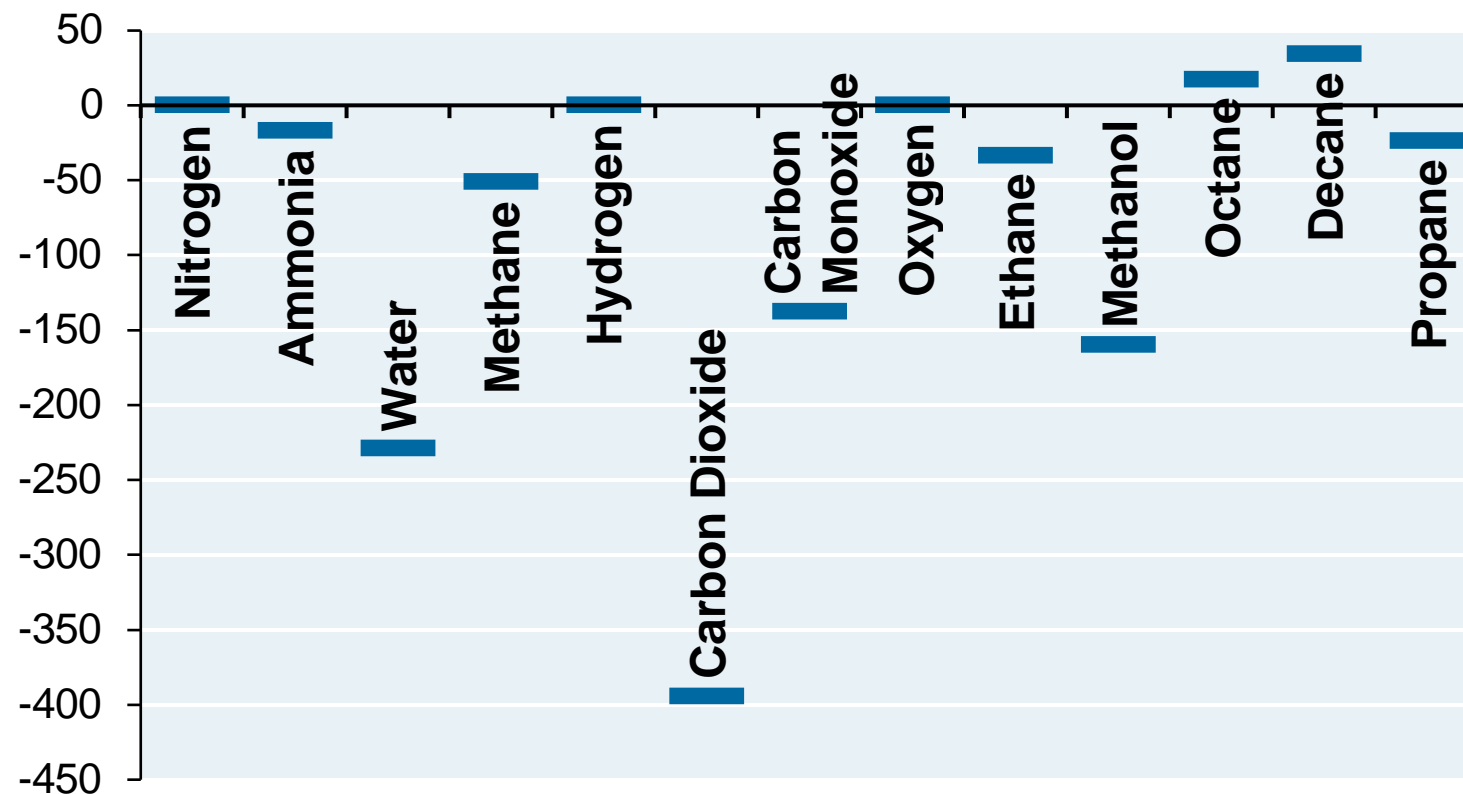
Source: BP, IEA, WRI, UVA, 16th GHG Conference, JPMAM. 2023.

35 mph
Gale

CO₂ is not a great place to start as a fuel source

Thermodynamic potential of select molecules

Gibbs free energy



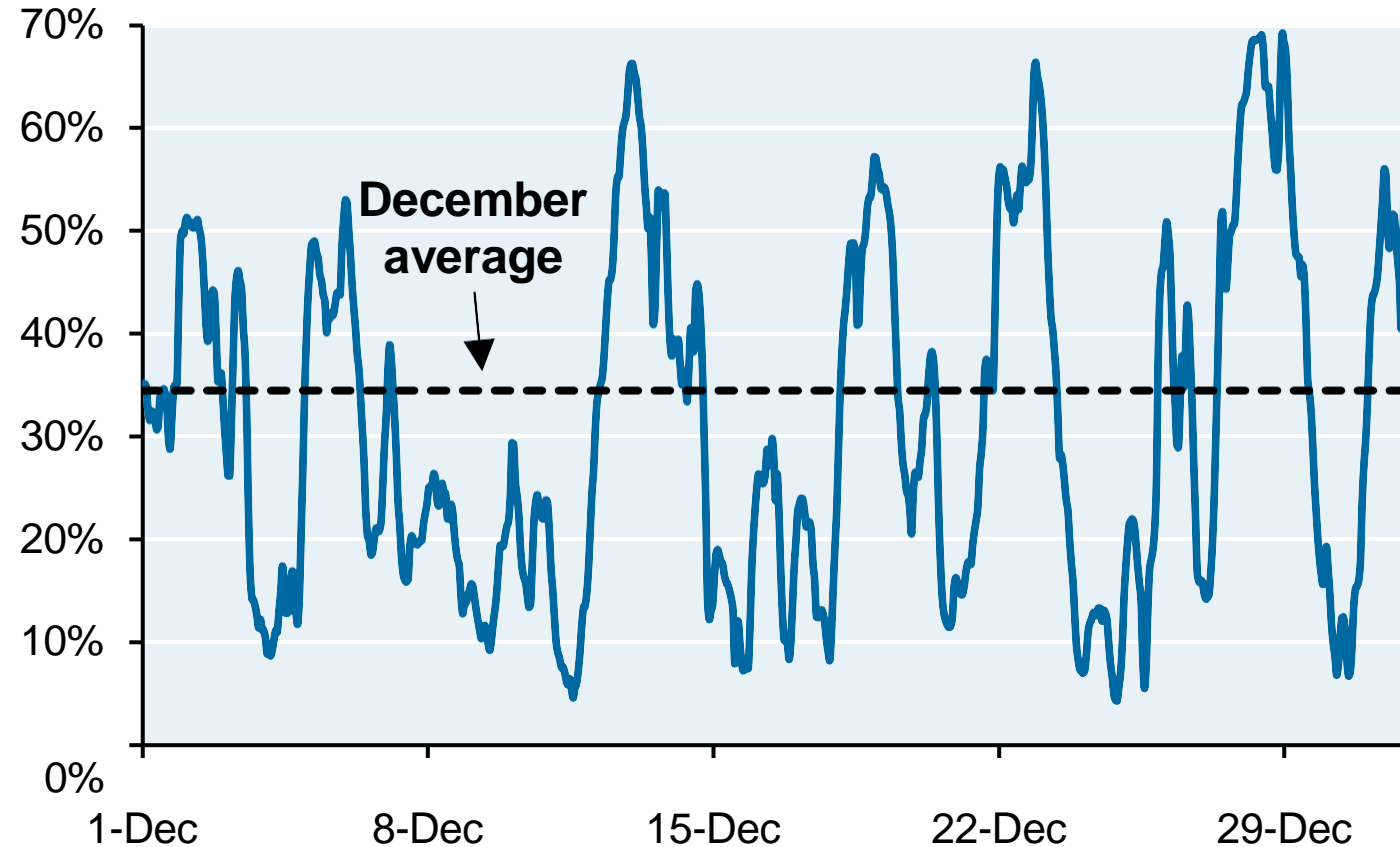
Source: Peter Edwards (Oxford). 2010.

25 mph
Strong breeze

Levelized costs are usually fictional...

ERCOT wind capacity factors, December 2022

Percent



Source: EIA, JPMAM. December 2022.

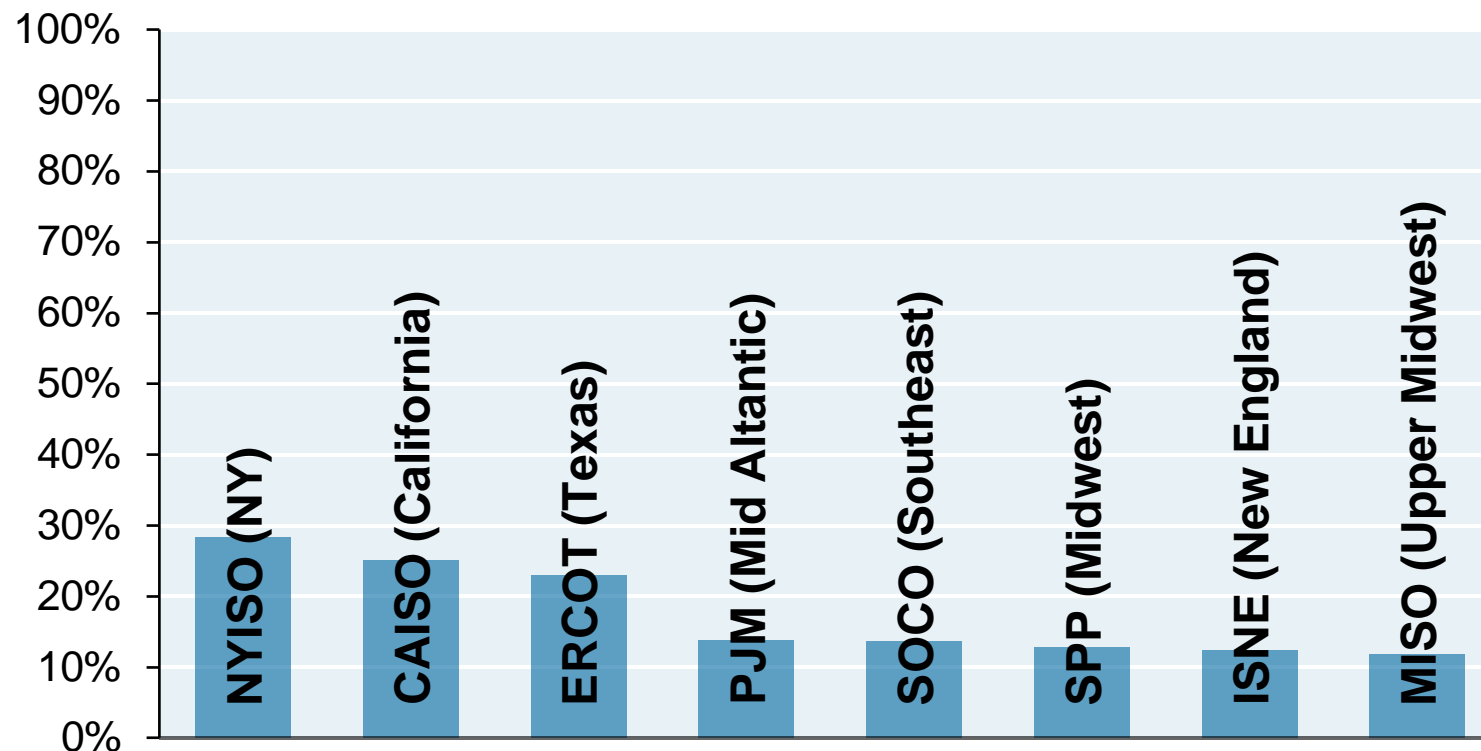
- LCOE calculated the same way whether Texas wind capacity factors are 32% for every hour of December, or if they average 32% but vary from 5%-70%
- LCOE does not include the cost of backup power, utility-scale storage or regional transmission expansion required to accompany high-renewable grids

25 mph
Strong breeze

...as capacity credits clearly indicate...

How much natural gas capacity can be reduced per MW of new wind and solar power?

%, computed for 2021, assuming new wind and solar = 10% of demand

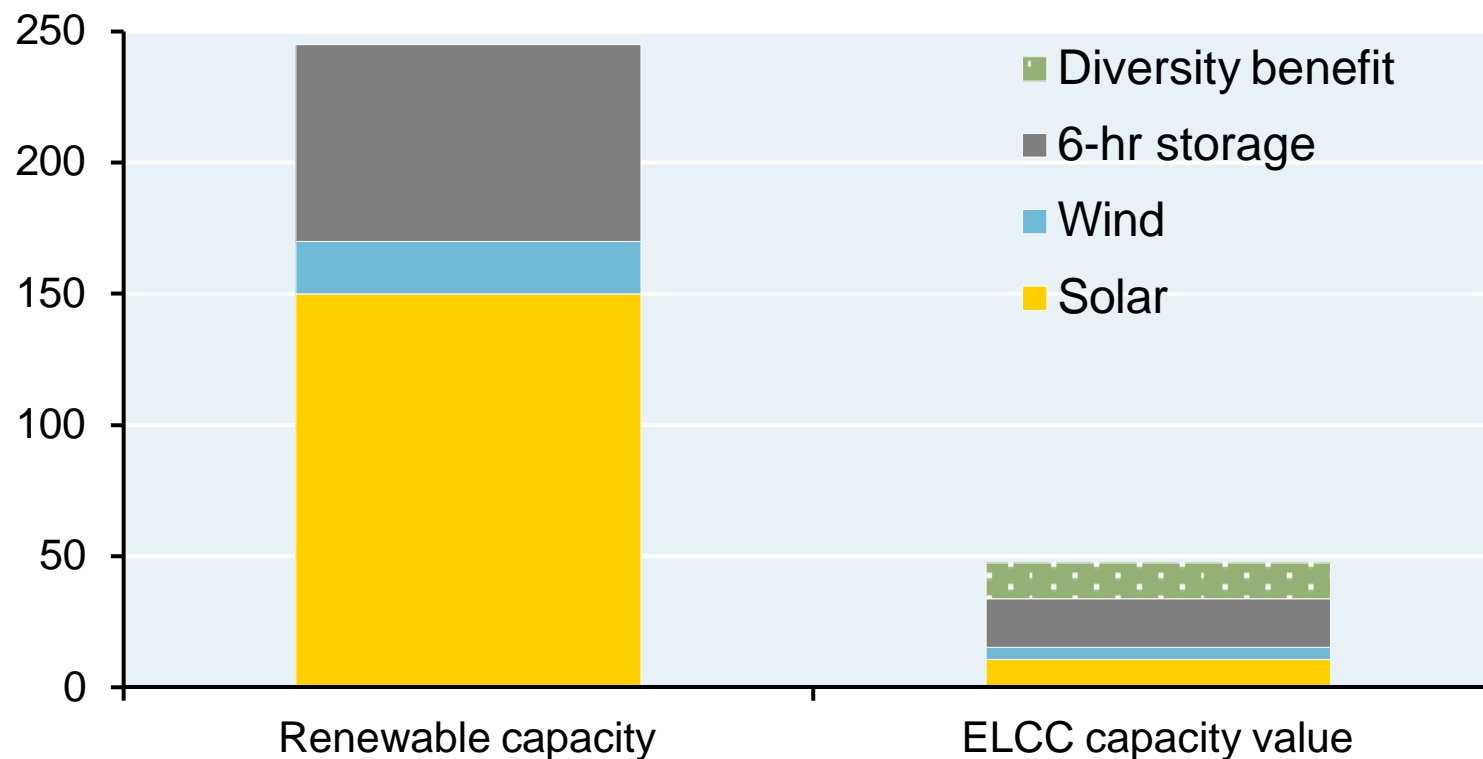


Source: EIA data, JPMAM computations. 2022.

25 mph
Strong breeze

...and which are confirmed by Effective Load Carrying Capability

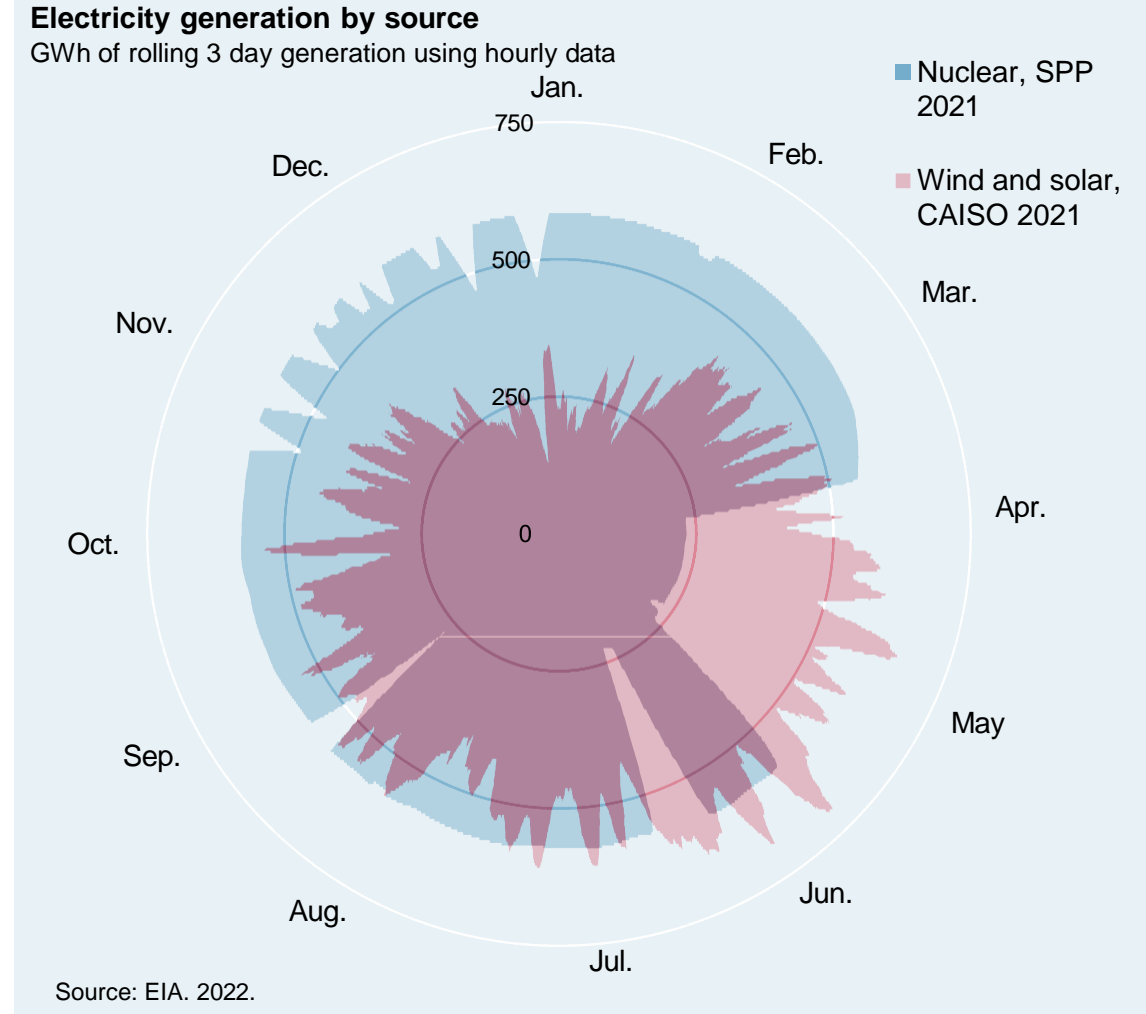
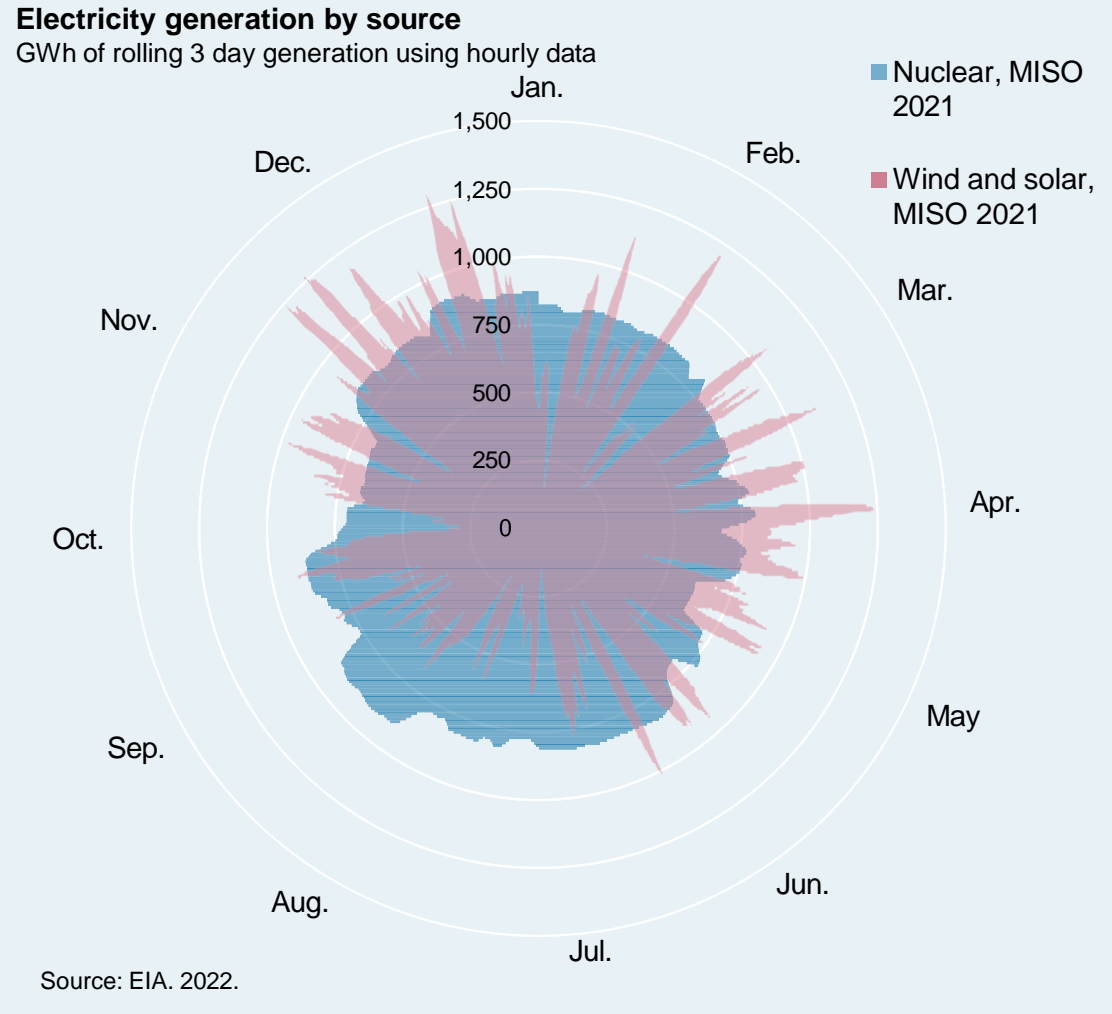
California's ELCC: 245 GW of wind/solar/storage only provides 50 GW of load carrying capacity, GW



Source: "Long-Run Resource Adequacy under Deep Decarbonization Pathways for California", E3. June 2019.

25 mph
Strong breeze

Intermittency for MISO and CAISO regions

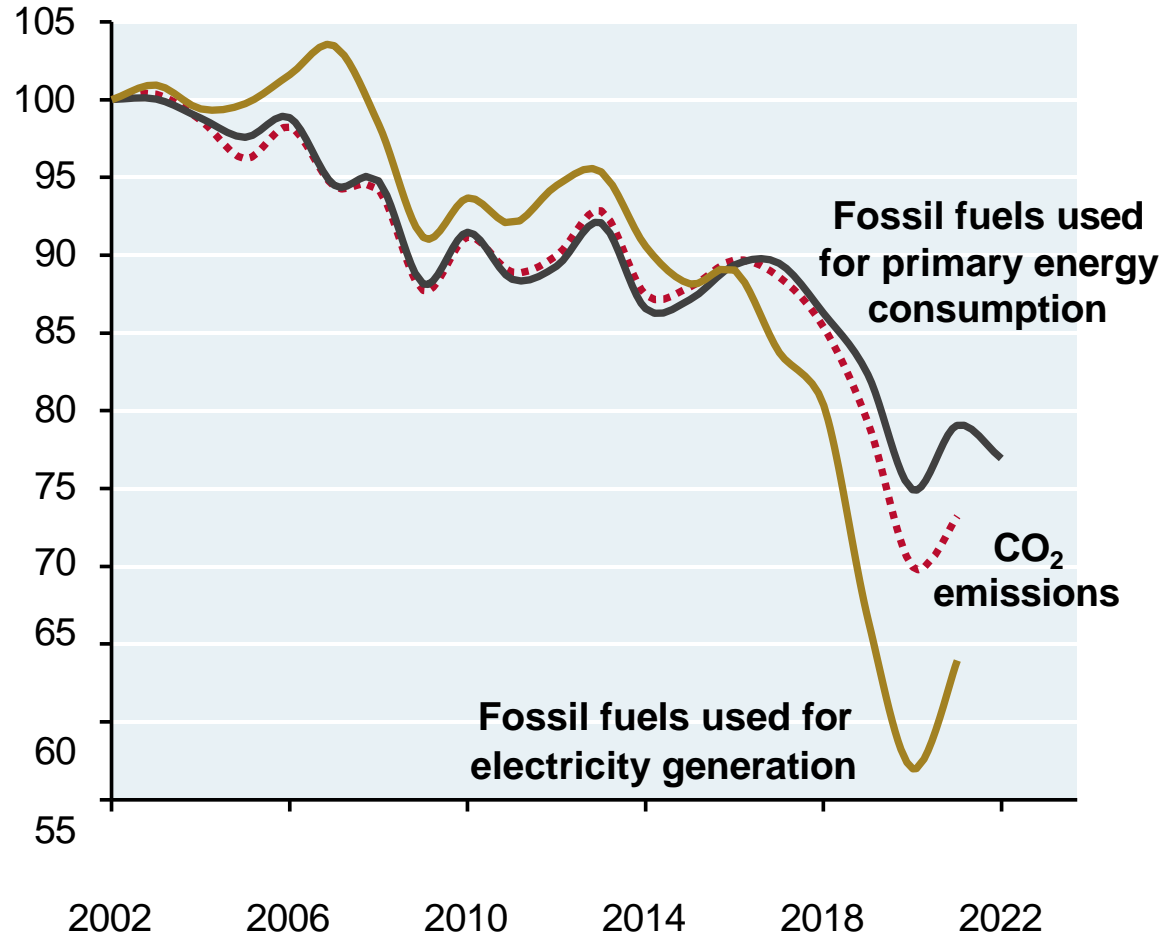


25 mph
Strong breeze

Germany

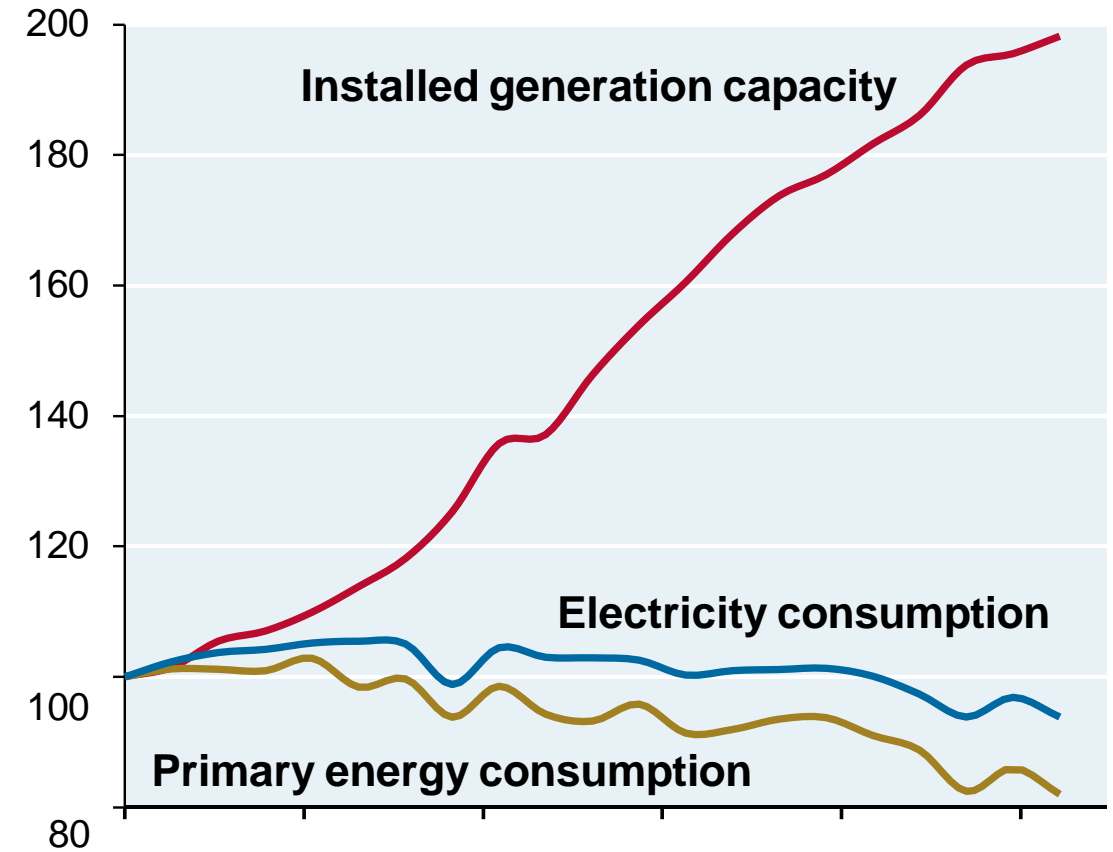
Germany CO₂ emissions and fossil fuel use

Index (100 = 2002)



Germany generation capacity and energy use

Index (100 = 2002)



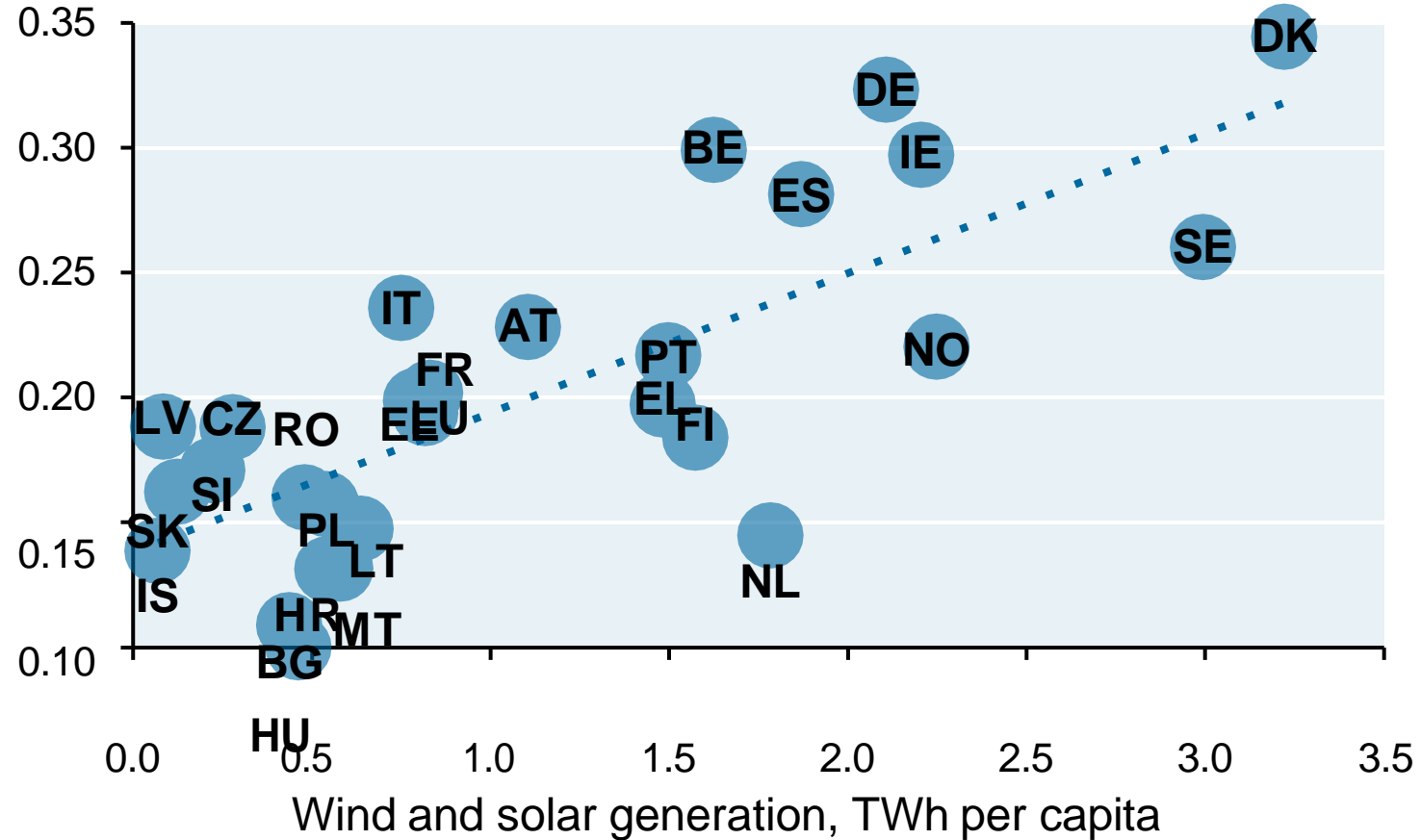
Source: AG Energiebilanzen, BP, JPMAM. 2022.

2002 2006 2010 2014 2018 2022
Source: Bundesverband BDEW, Fraunhofer Inst., JPMAM. 2023.

Europe: more renewables, higher electricity prices
Subsidies financed by taxpayers make cost comparisons increasingly difficult

25 mph
Strong breeze

Household electricity prices vs wind and solar penetration in Europe by country, Electricity prices, EUR / kWh (H2 2021)



Source: Eurostat, JPMAM. 2022.

15 mph
Moderate breeze

Airborne methane measurements > figures reported to EPA

Publication	Year	Lead Author	Findings
Stanford	2022	Chen	Permian emissions several times higher than EPA estimates
IEA	2022	N/A	Methane emissions from the energy sector are 70% higher than the amounts reported by national governments
Science	2022	Plant	Flaring destroys ~91% of methane not 98%, a 5-fold difference
ACP	2021	Barkley	Oil/gas methane emissions 48%-76% larger than EPA estimates
Science	2018	Alvarez	Supply chain emissions are ~60% higher than EPA estimates
Science	2020	Zhang	Permian Basin methane emissions are over two times higher than inventory-based estimates

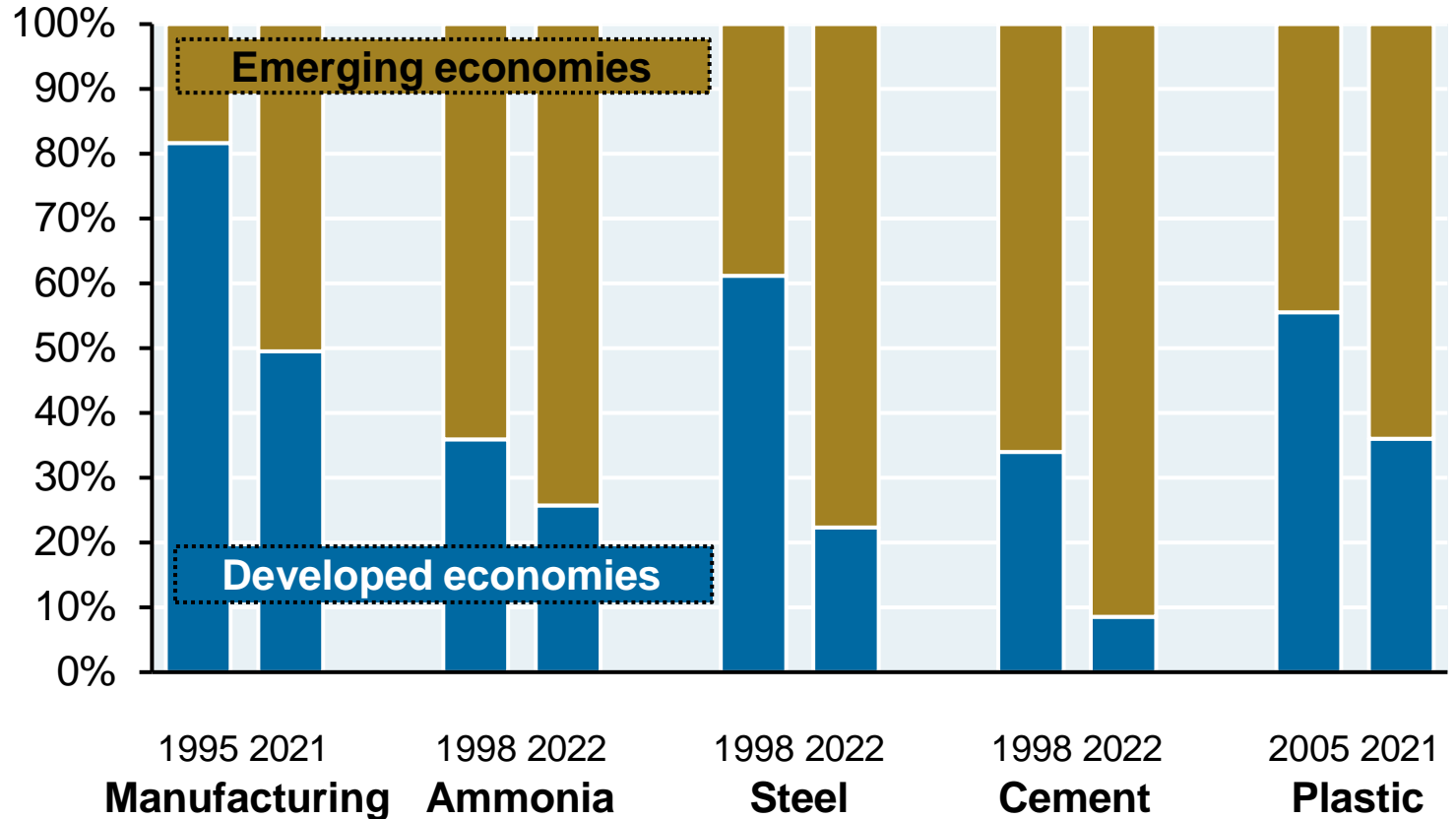
Source: JPMAM. 2023.

- Half of E&P operators in Permian Basin show > 50% gain in methane emissions intensity from 2019 to 2021, (*IOPscience, 2023, Hmiel et al.*)

50 mph Storm

Deindustrialization of the West

A shift in energy intensive manufacturing to the emerging world, % of global production



China:
 Ammonia 28%
 Steel 53%
 Cement 51%
 Plastic 32%

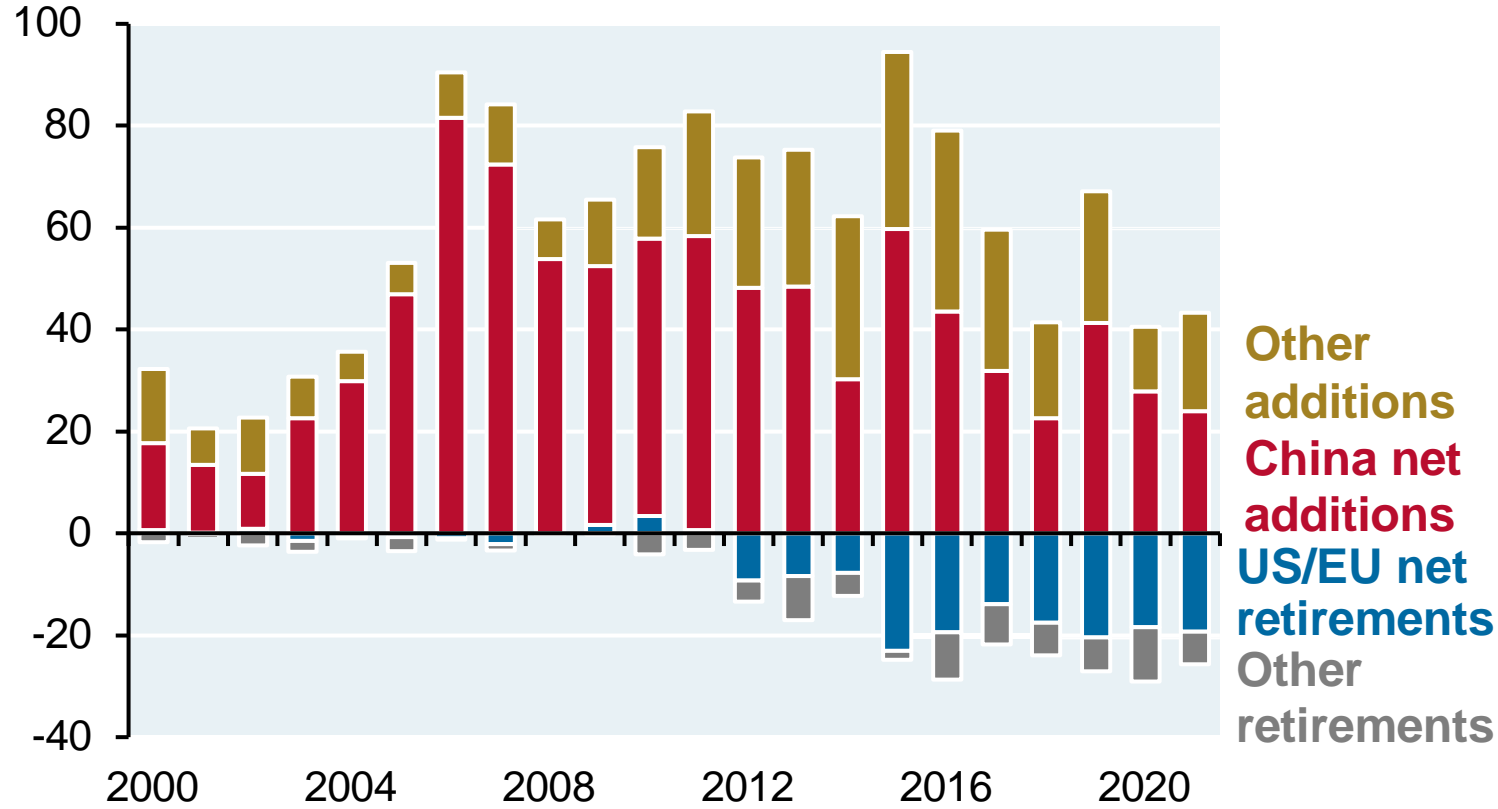
Source: UN DESA, Worldsteel, PlasticsEurope, USGS. 2022.

50 mph Storm

Deindustrialization of the West (continued)

The impact of China on global coal capacity

Coal capacity: additions and retirements, gigawatts

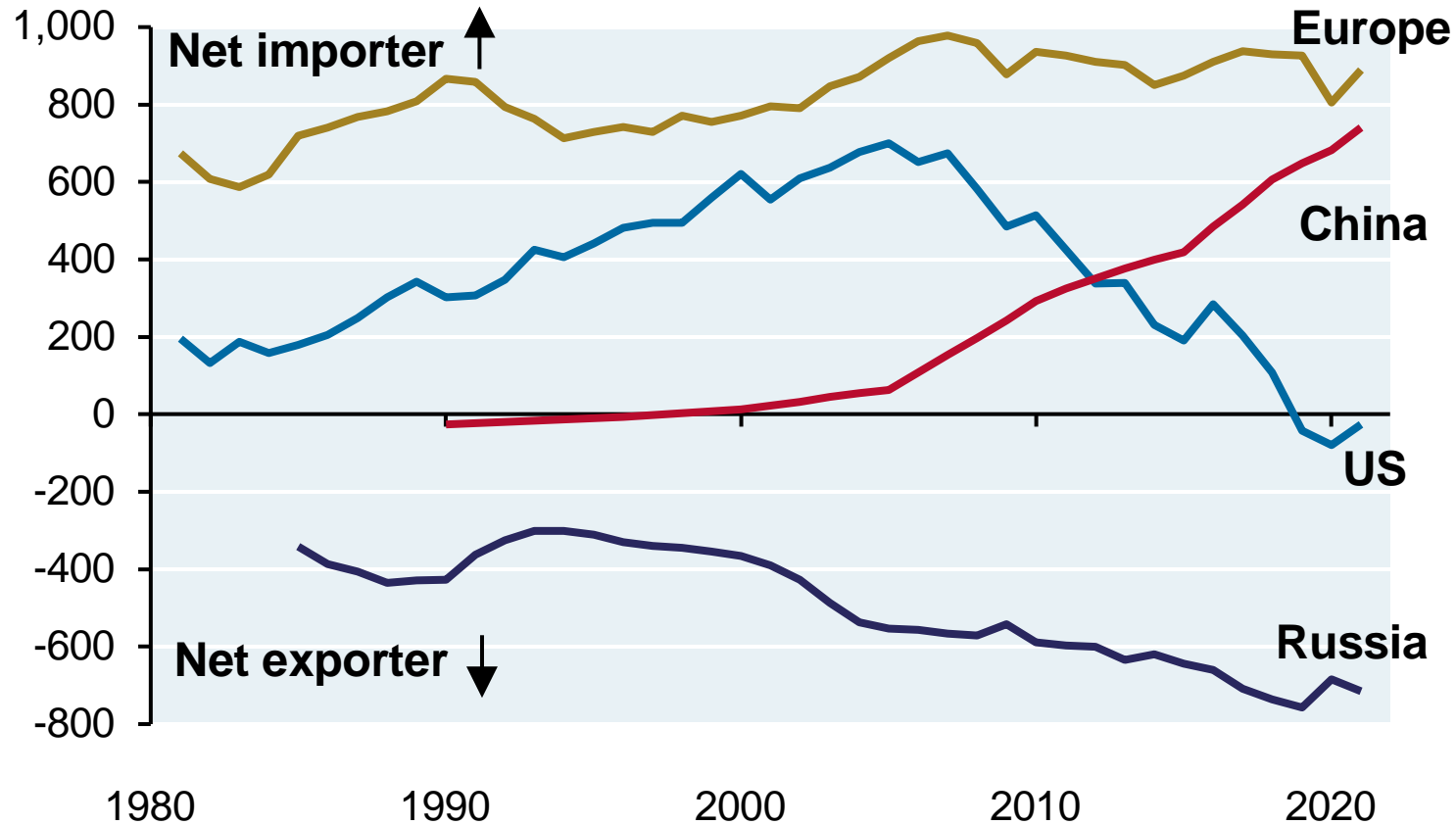


Source: Centre for Research on Energy and Clean Air. 2021.

Energy transitions must be managed carefully

Energy dependence and independence

Net imports of oil, natural gas and coal in million tonnes of oil equiv.

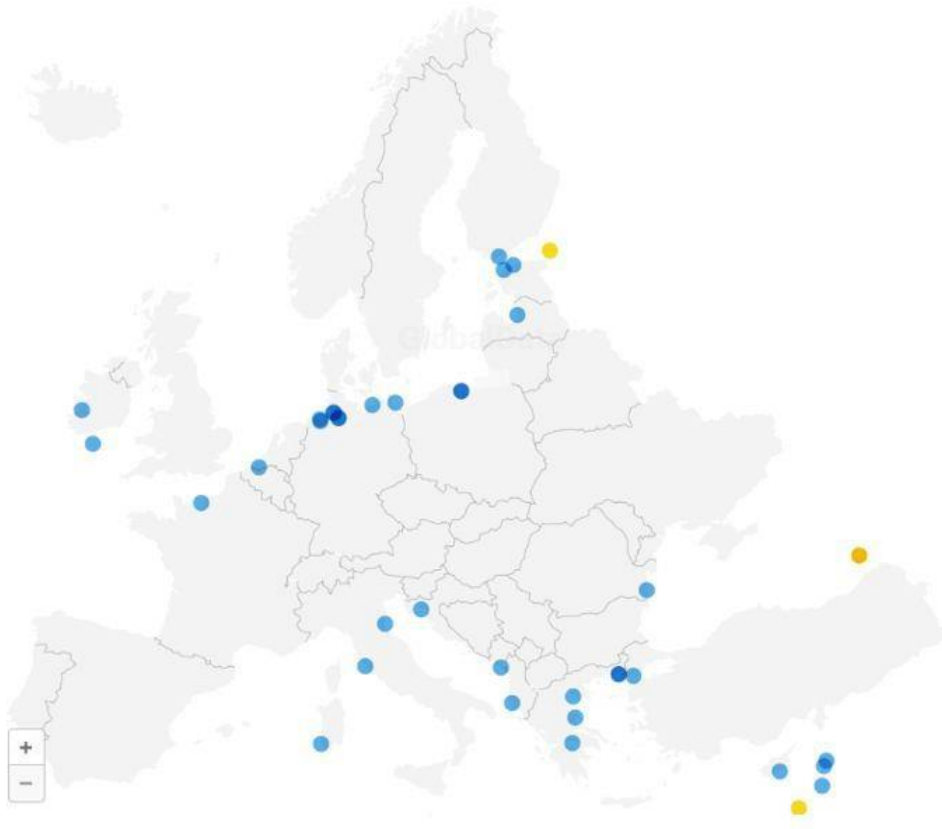


Source: BP Statistical Review, NBS China, JPMAM. 2022.

European LNG

Planned LNG facilities in Europe

Regasification Liquefaction



Source: GlobalData

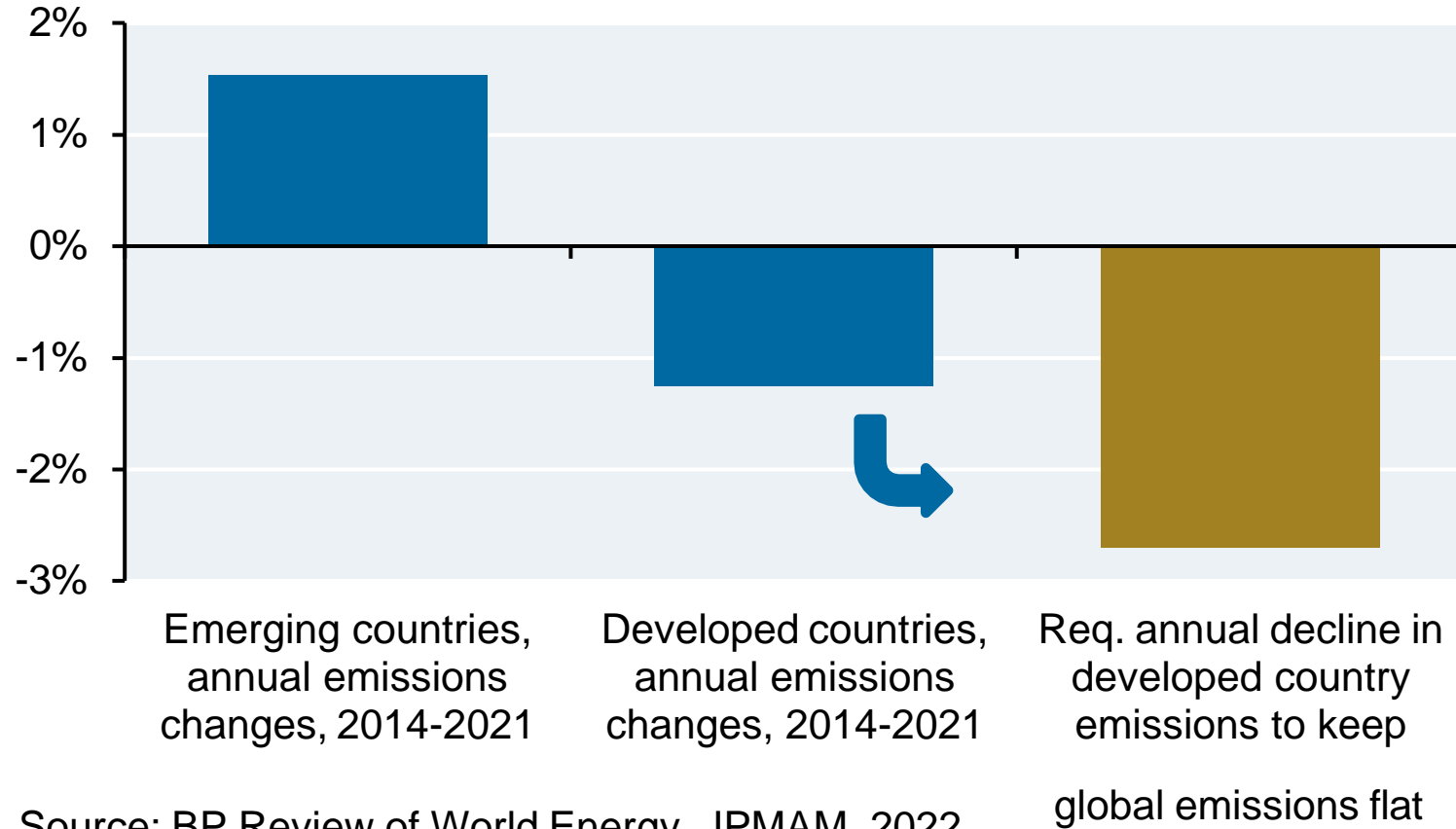
Don't Blow Up the Bridge



Appendix

Emissions math

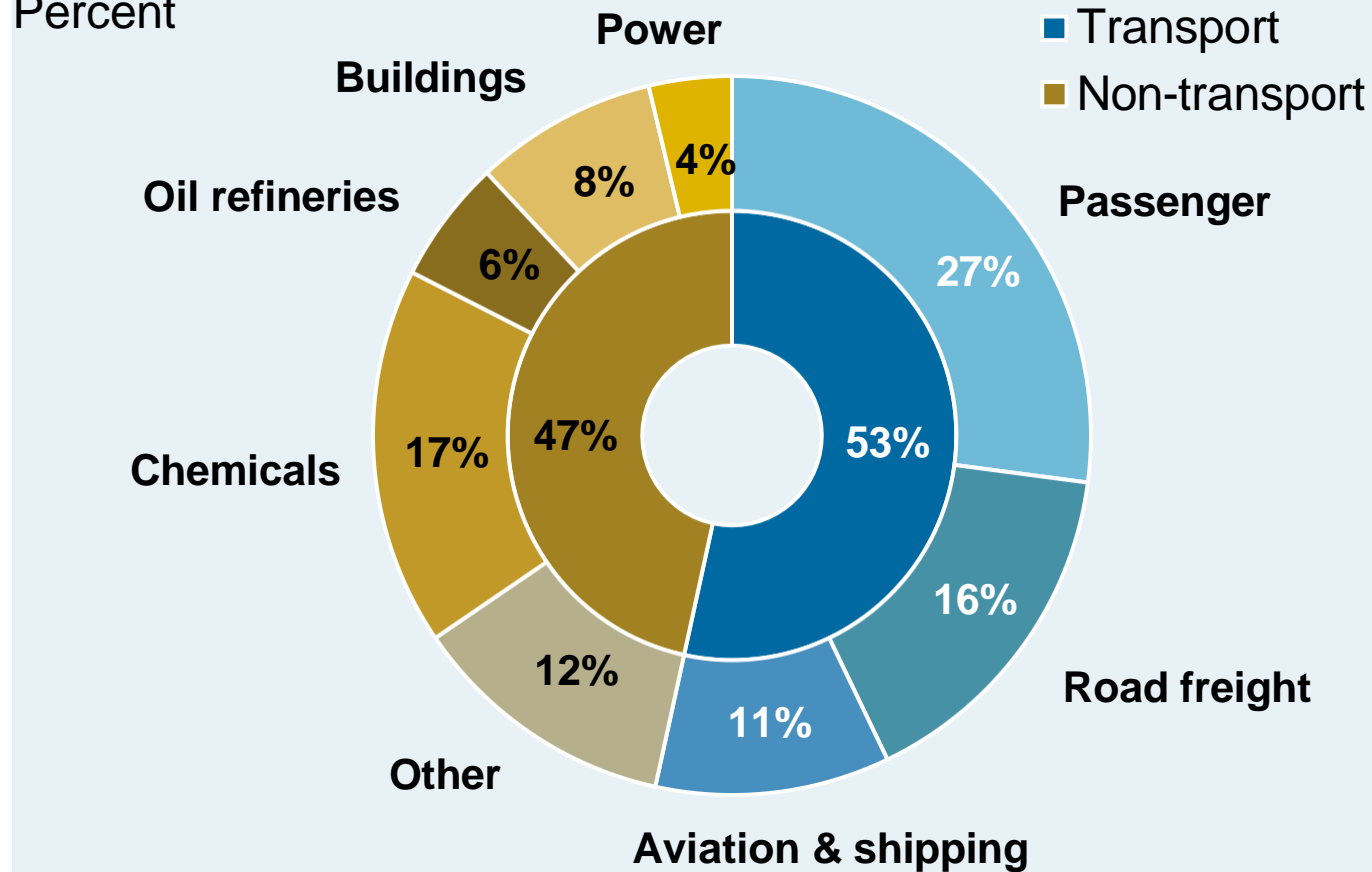
Required emission decline in developed countries to keep global CO₂ emissions flat: 2x faster than current pace



Oil demand

Global oil demand by sector

Percent

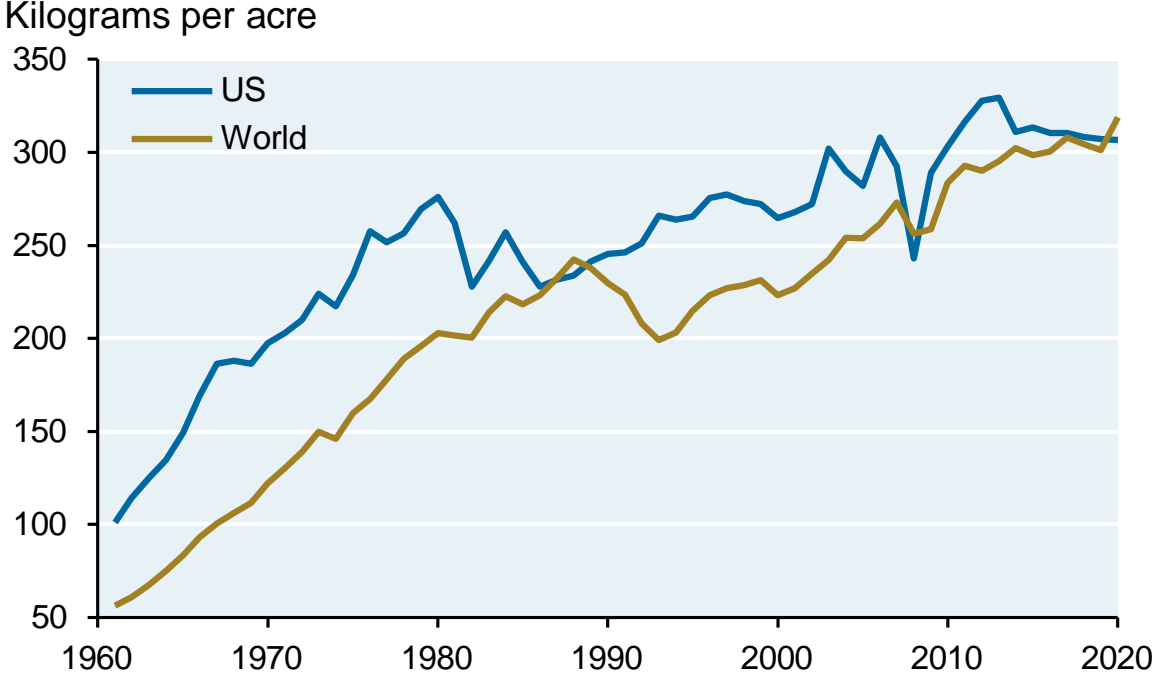


Source: IEA World Energy Outlook. 2022.

25 mph
Strong breeze

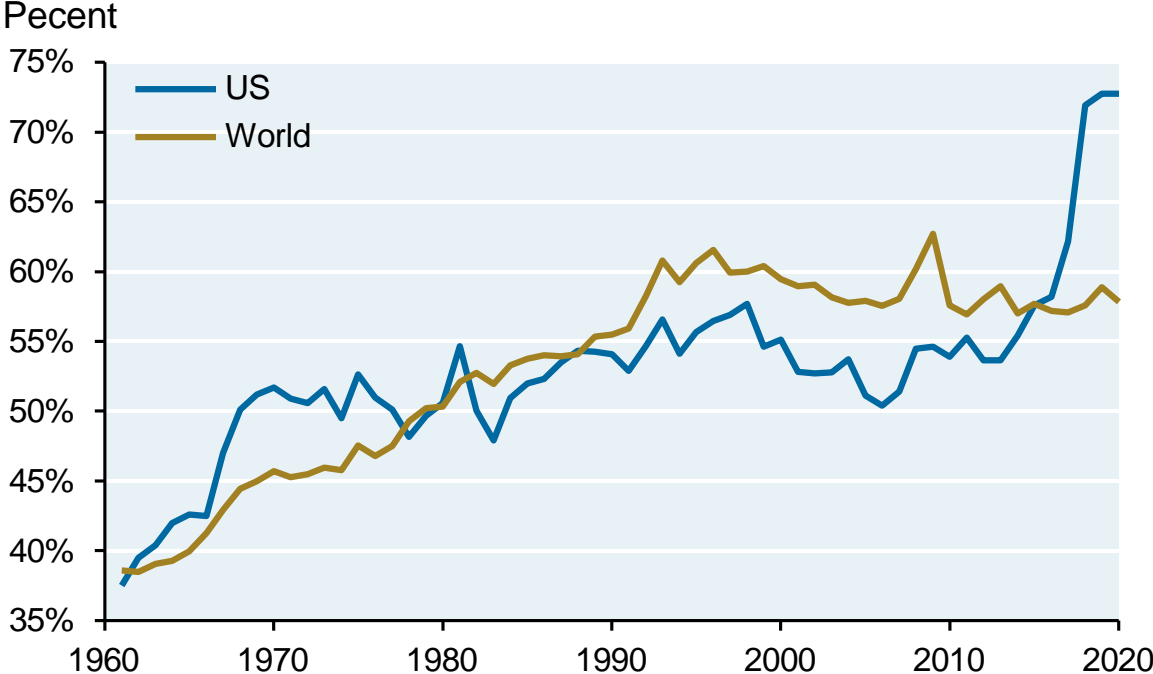
Innovation needed to bring down fertilizer use and nitrogen intensity

US vs world fertilizer use per acre of cropland



Source: UNFAO, Our World in Data. 2022.

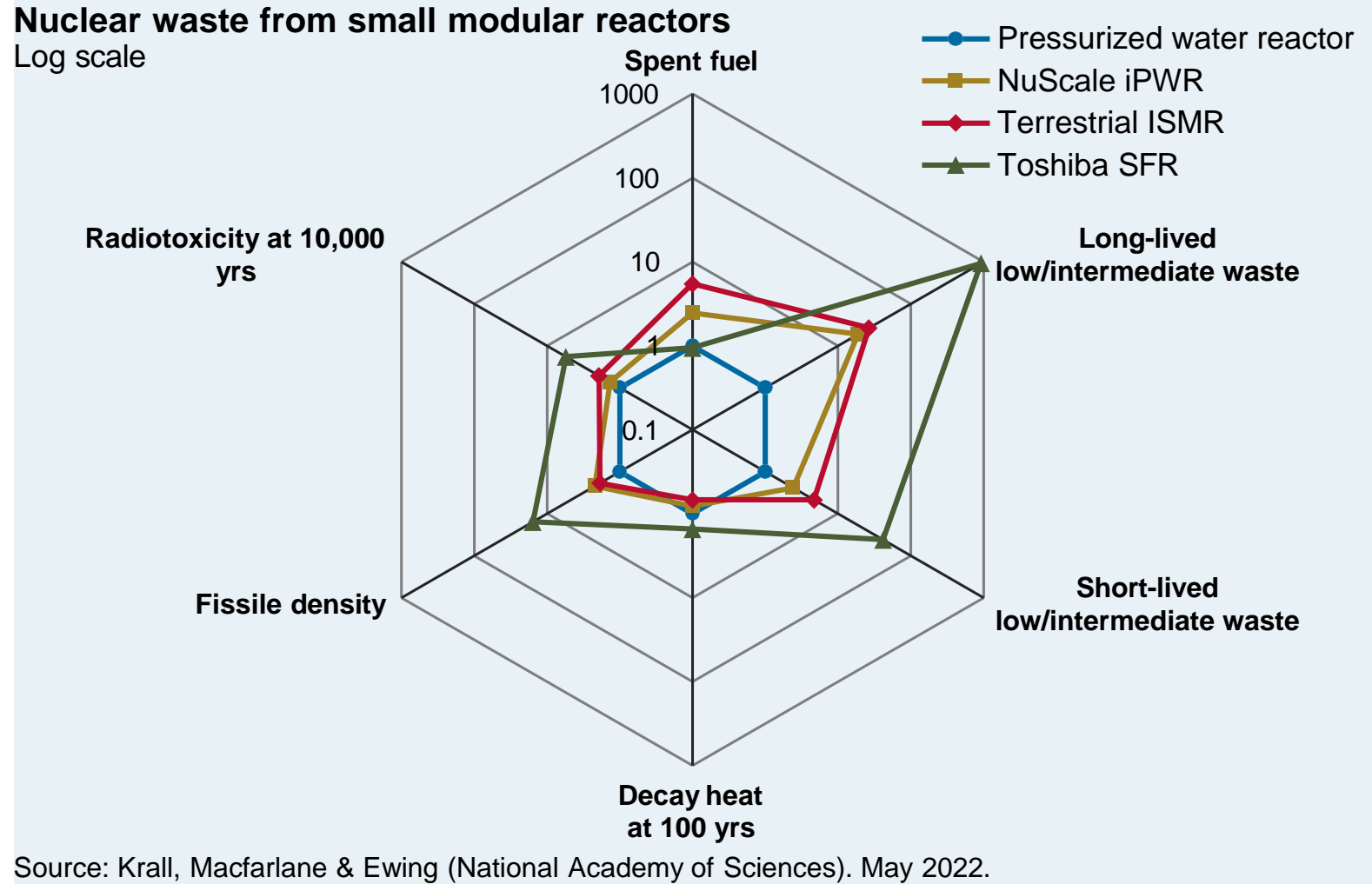
Nitrogen share of fertilizer production



Source: UNFAO, Our World in Data. 2022.

**120
mph**

The Ewing/PNAS paper on SMRs

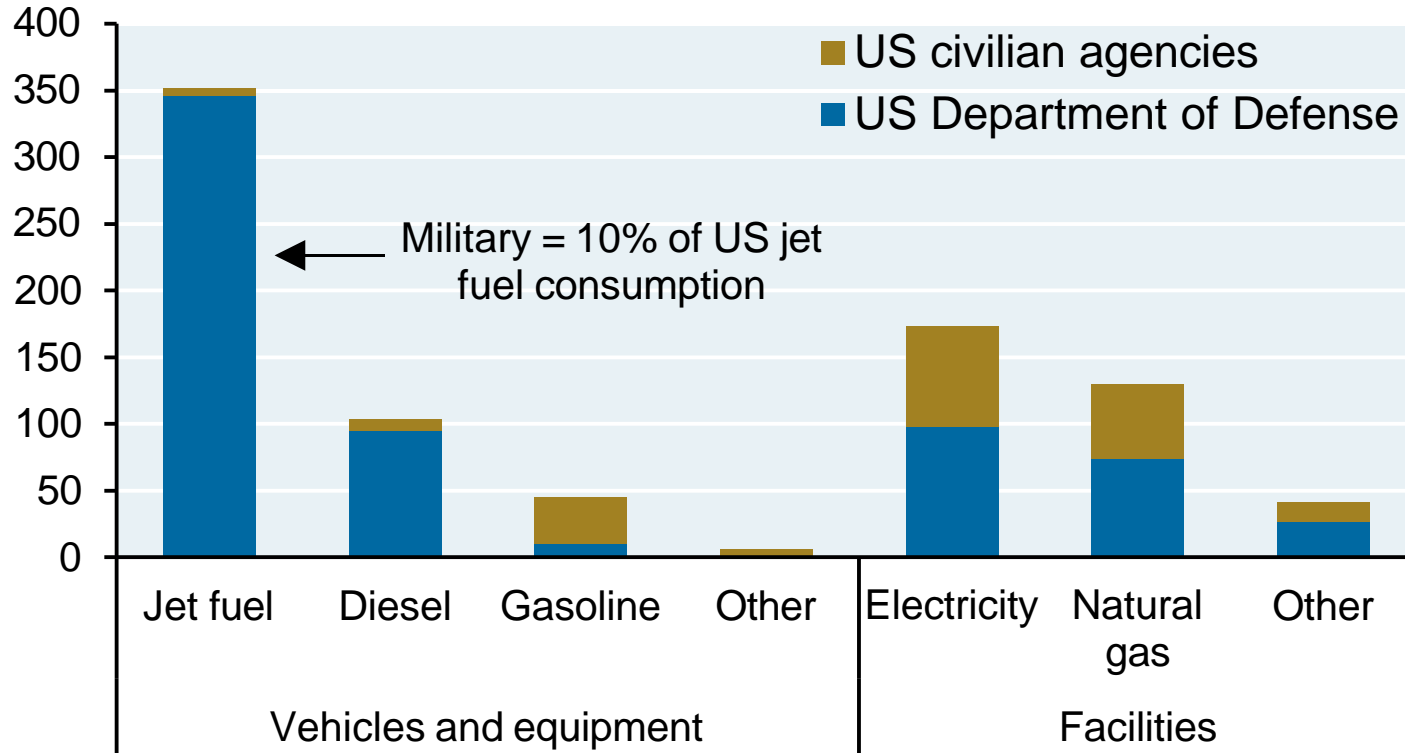


65 mph
Hurricane

Synthetic military jet fuel from green electrolyzed hydrogen and air/ocean sourced CO₂

Jet fuel dominates US military energy consumption

Trillion BTUs



After the conversion and energy penalties, a ~90% energy loss

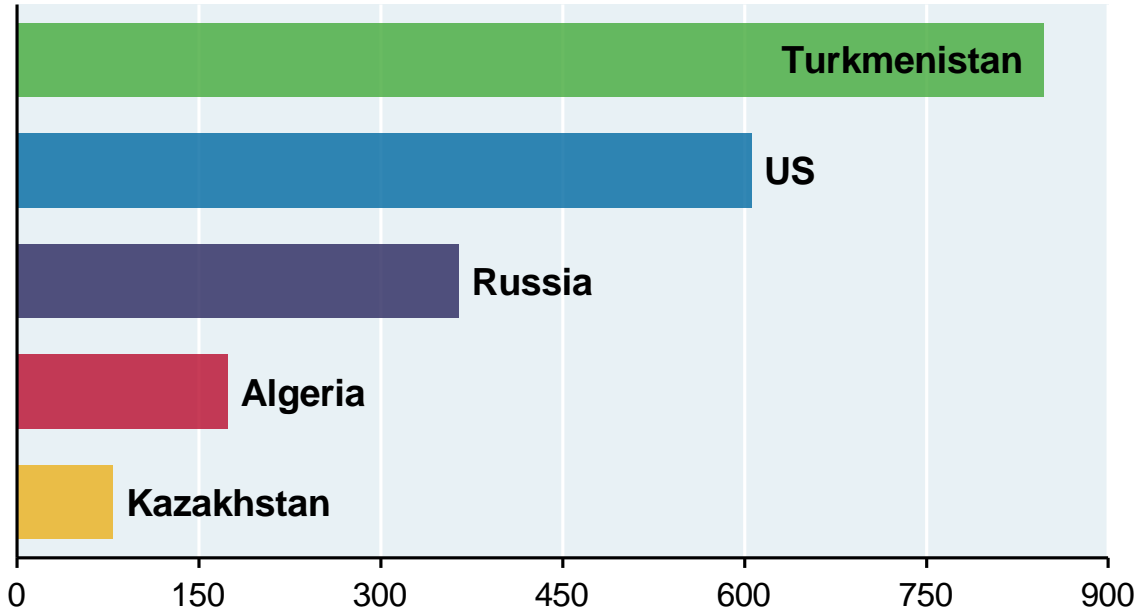
Source: DOE. 2021.

50 mph Storm

Turkmenistan

Recorded methane super-emitter events

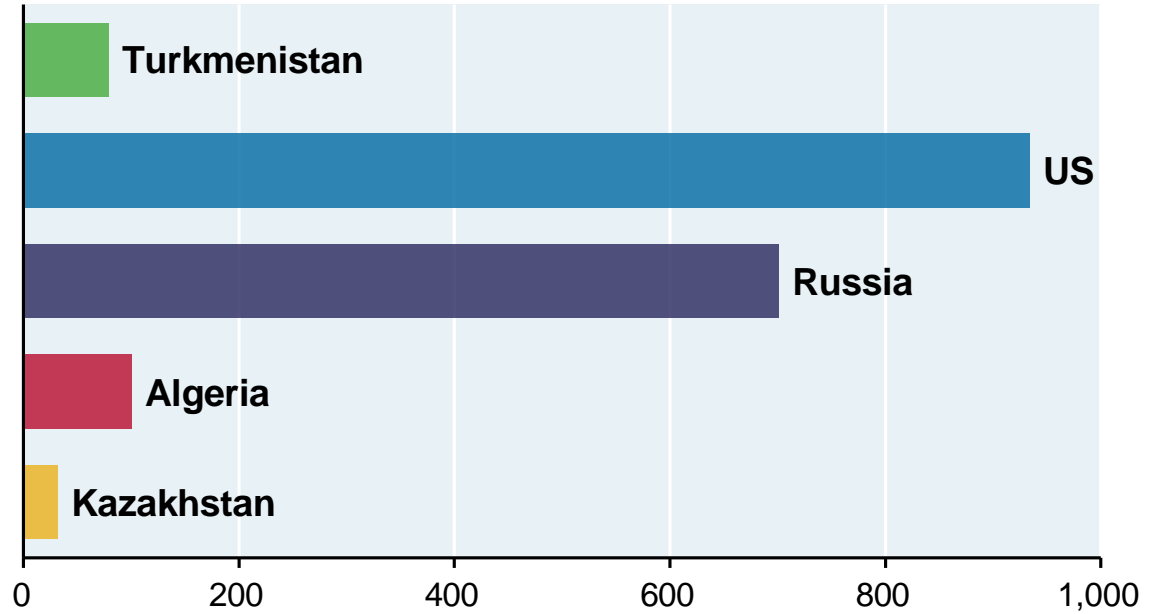
Number of events, 2019-2022



Source: Kayrros. 2022.

Natural gas production, 2021

Billion cubic meters



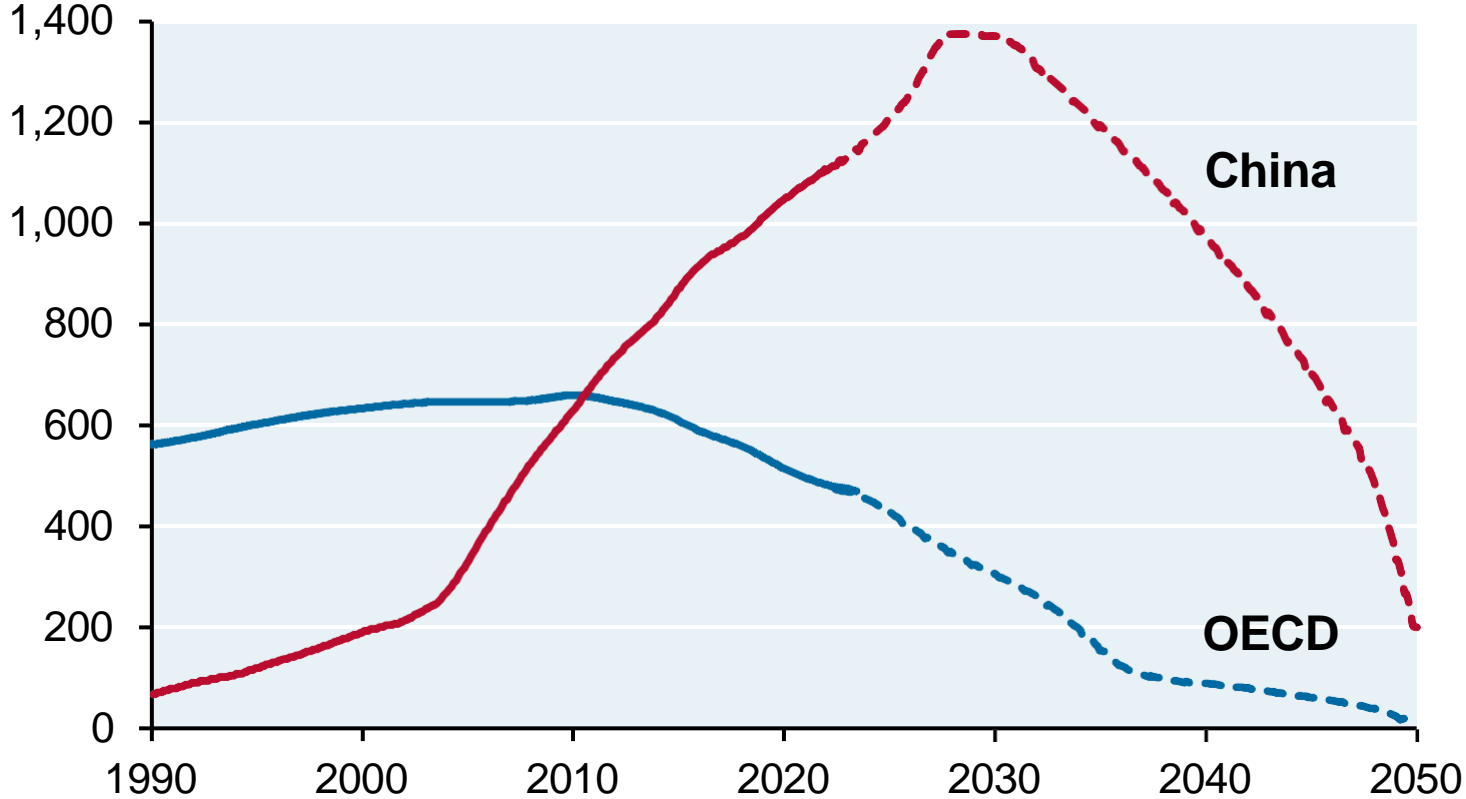
Source: BP, JPMAM. 2022.

50 mph
Storm

China vs OECD: historic and pledged coal capacity

Historic and pledged coal capacity

Gigawatts of capacity



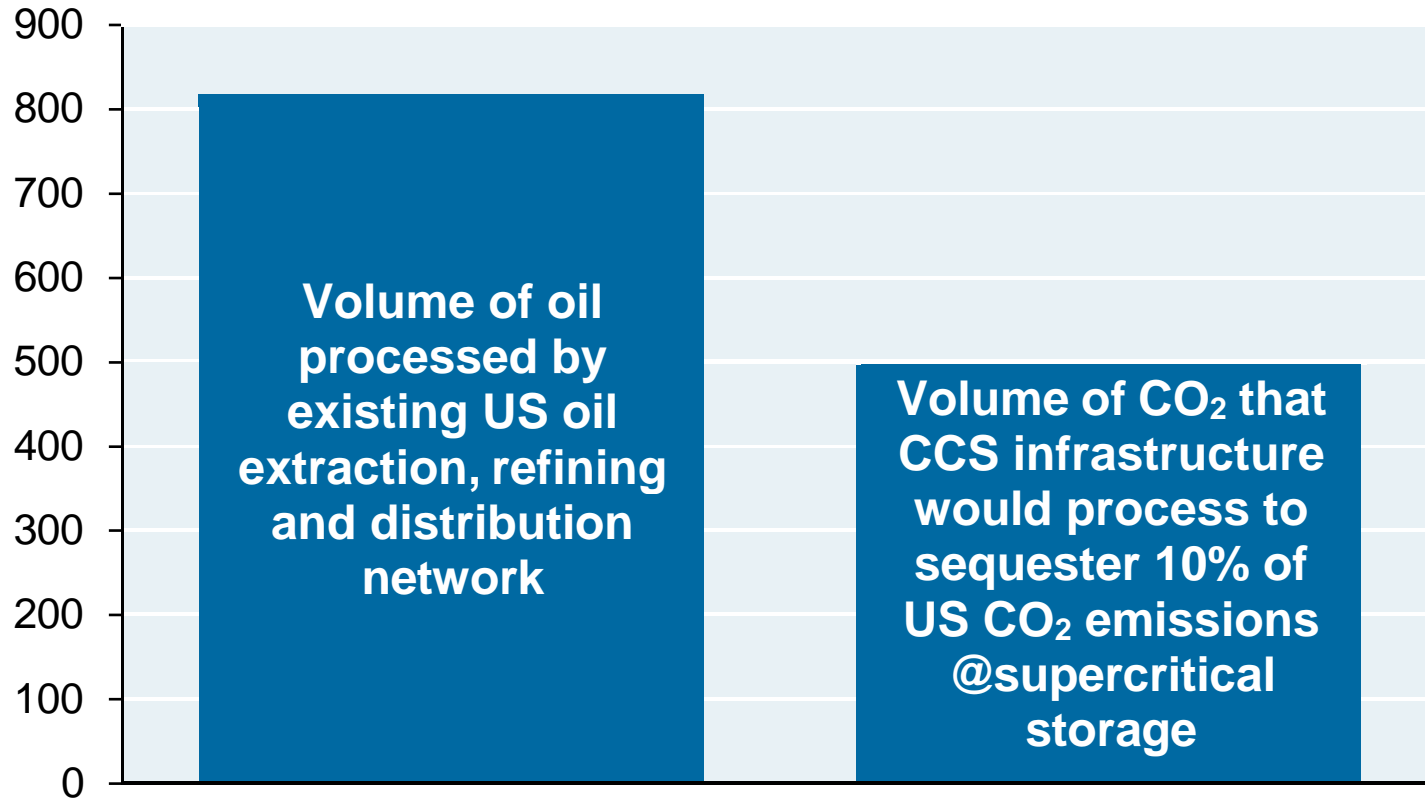
Source: "Boom and Bust Coal 2023", Global Energy Monitor. April 2023.

35 mph
Gale

CCS infrastructure: 10% of emissions

Infrastructure requirements for CCS

Million cubic meters per year



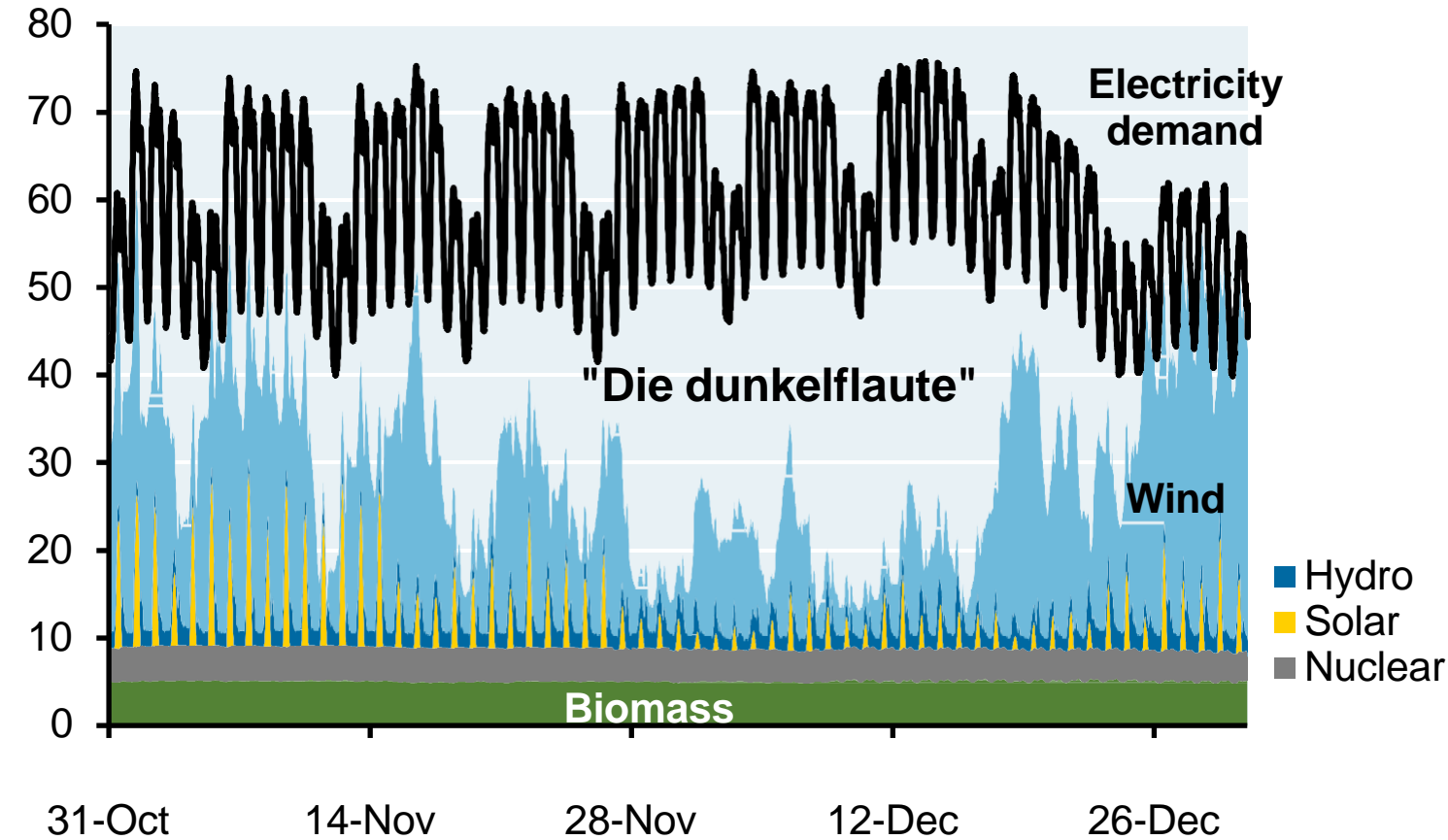
Source: BP, Global CCS Institute, Global Carbon Project, JPMAM. 2023.

25 mph
Strong breeze

The two-week dunkelflaute

Germany generation by source, Nov - Dec 2022

MW per 15 minute interval, thousands



Source: Fraunhofer ISE, JPMAM. 2022.

MAINEPERS

BOARD OF TRUSTEES MEMORANDUM

TO: BOARD MEMBERS

FROM: KATHY MORIN, DIRECTOR, ACTUARIAL & LEGISLATIVE AFFAIRS

SUBJECT: ECONOMIC ASSUMPTION REVIEW

DATE: JULY 5, 2023

POLICY REFERENCE

[Board Policy 2.2 – Actuarial Soundness and Funding](#)

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

Board policy 2.2 requires an annual examination of the economic assumptions used in the valuation of the defined benefit plans. This includes the discount rate and inflation assumptions.

Gene Kalwarski and Bonnie Rightnour will review the current economic assumptions at the July meeting, recommend maintaining the current assumptions, and answer any questions you might have. A copy of their presentation is included with this memo.

RECOMMENDATION

Accept the recommendation of the actuary to maintain the current economic assumptions.

Maine Public Employees Retirement System



Economic Assumption Review

July 13, 2023

Gene Kalwarski, FSA, EA, MAAA, FCA

Bonnie Rightnour, FSA, EA, MAAA



Background

- Economic assumptions are reviewed annually
 - Discount rate, price inflation, wage inflation
 - Updated as needed to reflect current market expectations
 - Not dependent on accumulation of data
- Maine PERS reviews demographic assumptions every 5 years – next review will follow the June 30, 2025 actuarial valuation

Economic Assumptions - Factors to Consider



1. Historical Experience
2. Industry Trends
3. Regulatory Standards/Board Policies
4. Board's Risk Tolerance/Preference
5. Plan Dynamics
6. Future Expectations

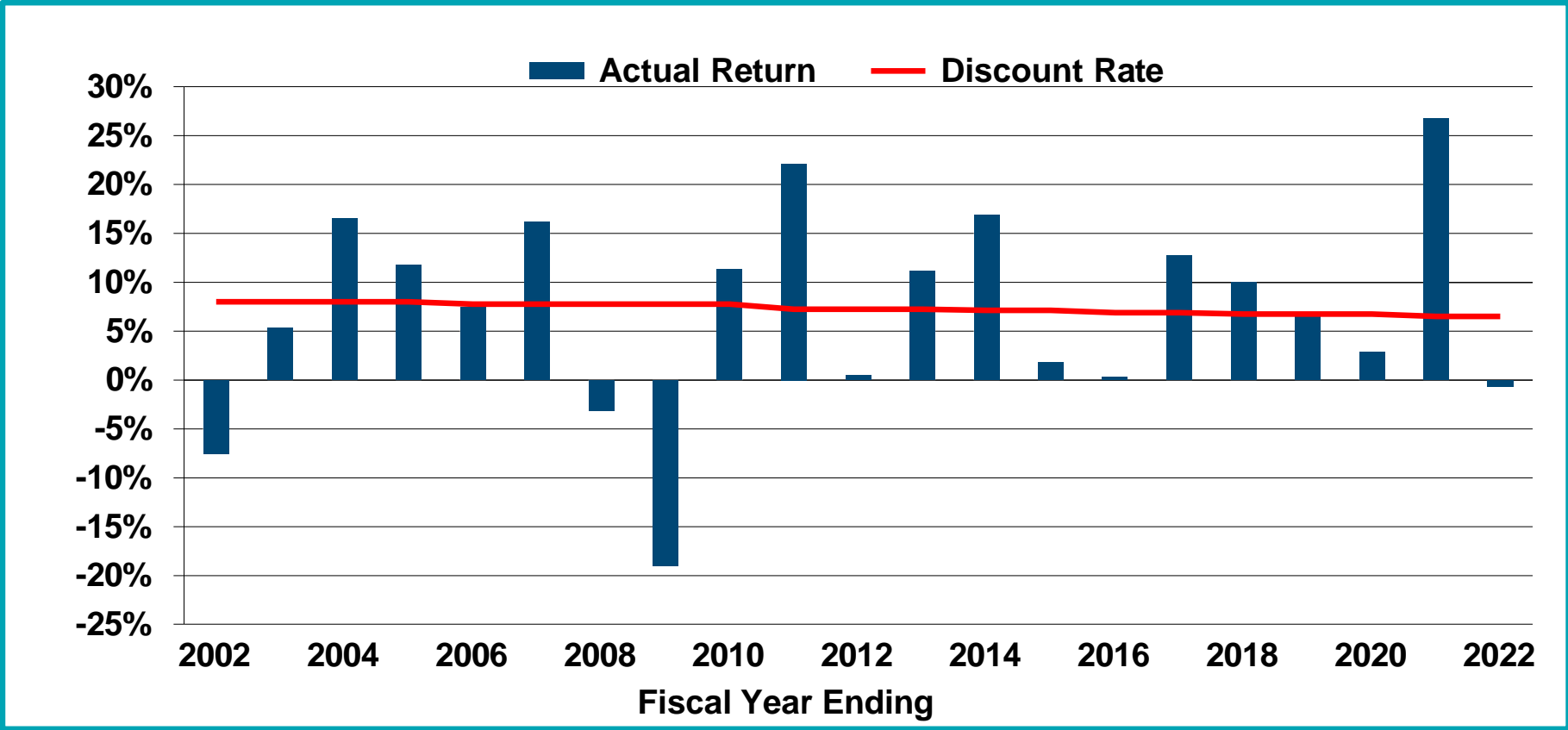


Discount Rate Assumption





1. Historical Maine PERS Experience



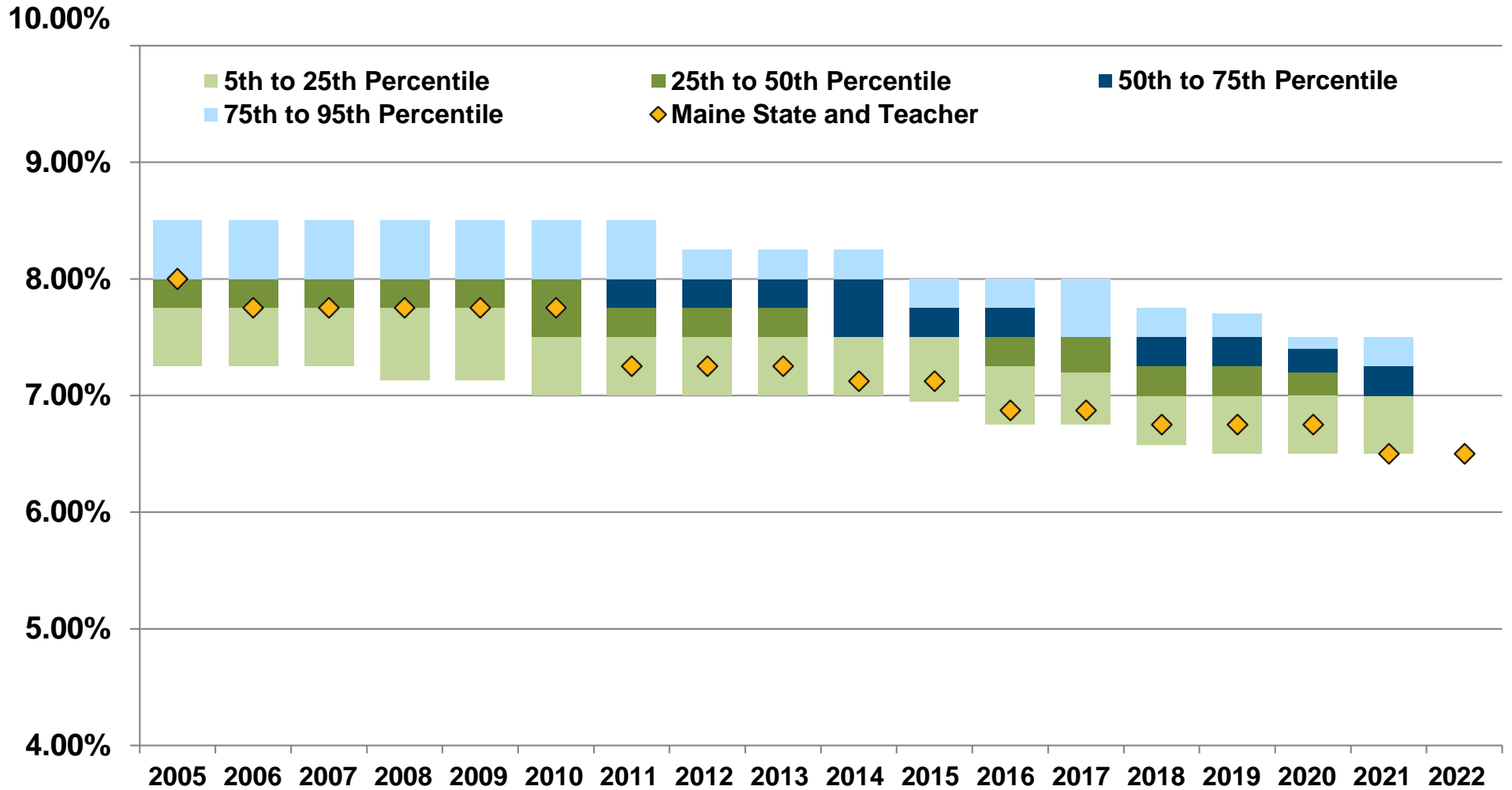
* 7.40% is the time weighted annual net return over the 20-year period, through FYE 2022

	July 1						
	1995	2006	2011	2014	2016	2018	2021
Discount Rate	8.00%	7.75%	7.25%	7.125%	6.875%	6.75%	6.50%



2. Industry Trends

Discount Rate

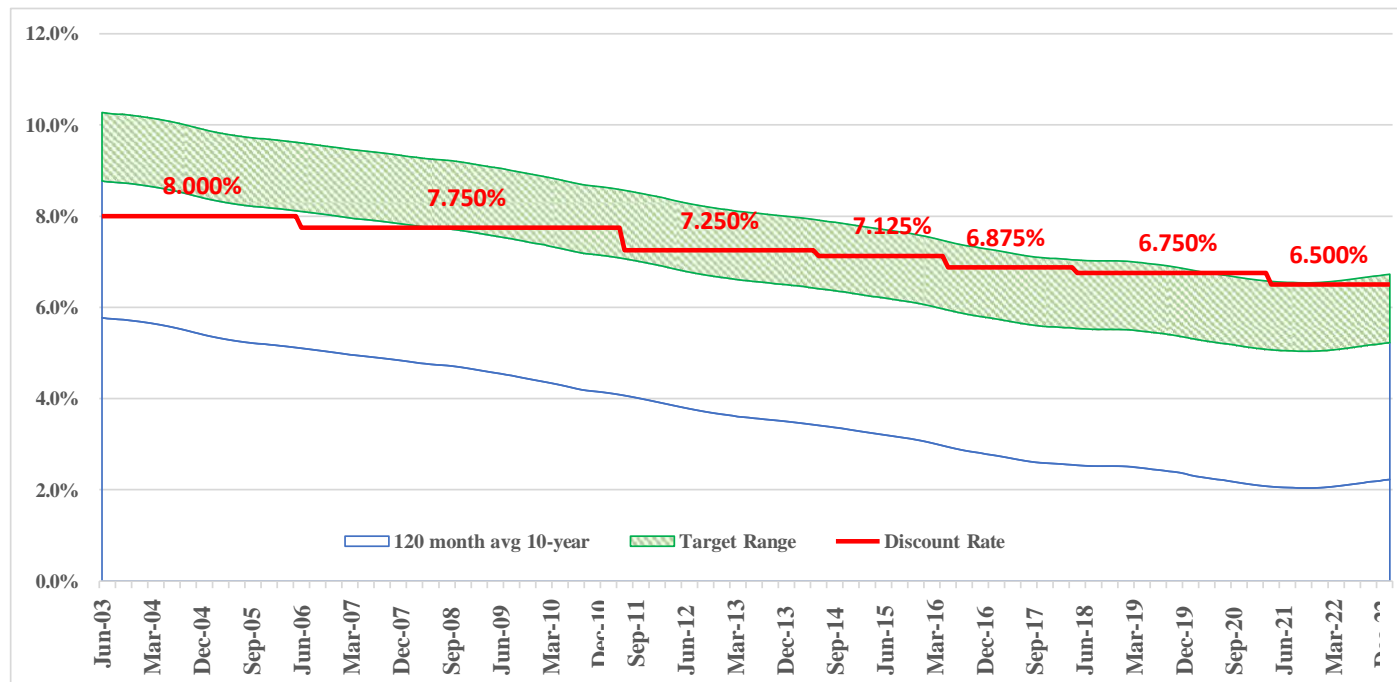


Survey Data from Public Plans Data as of 7/21/2022



3. Regulatory Standards / Board Policy

- Regulatory Standards – Currently none apply
- Board Policy
 - *“The discount rate on liabilities shall be compared to a guideline range of a combination of the 120-month average of the 10-year constant maturity treasury rate published by the Federal Reserve Bank of St. Louis plus 3% to 4.5%”*





4. The Board's Risk Preference

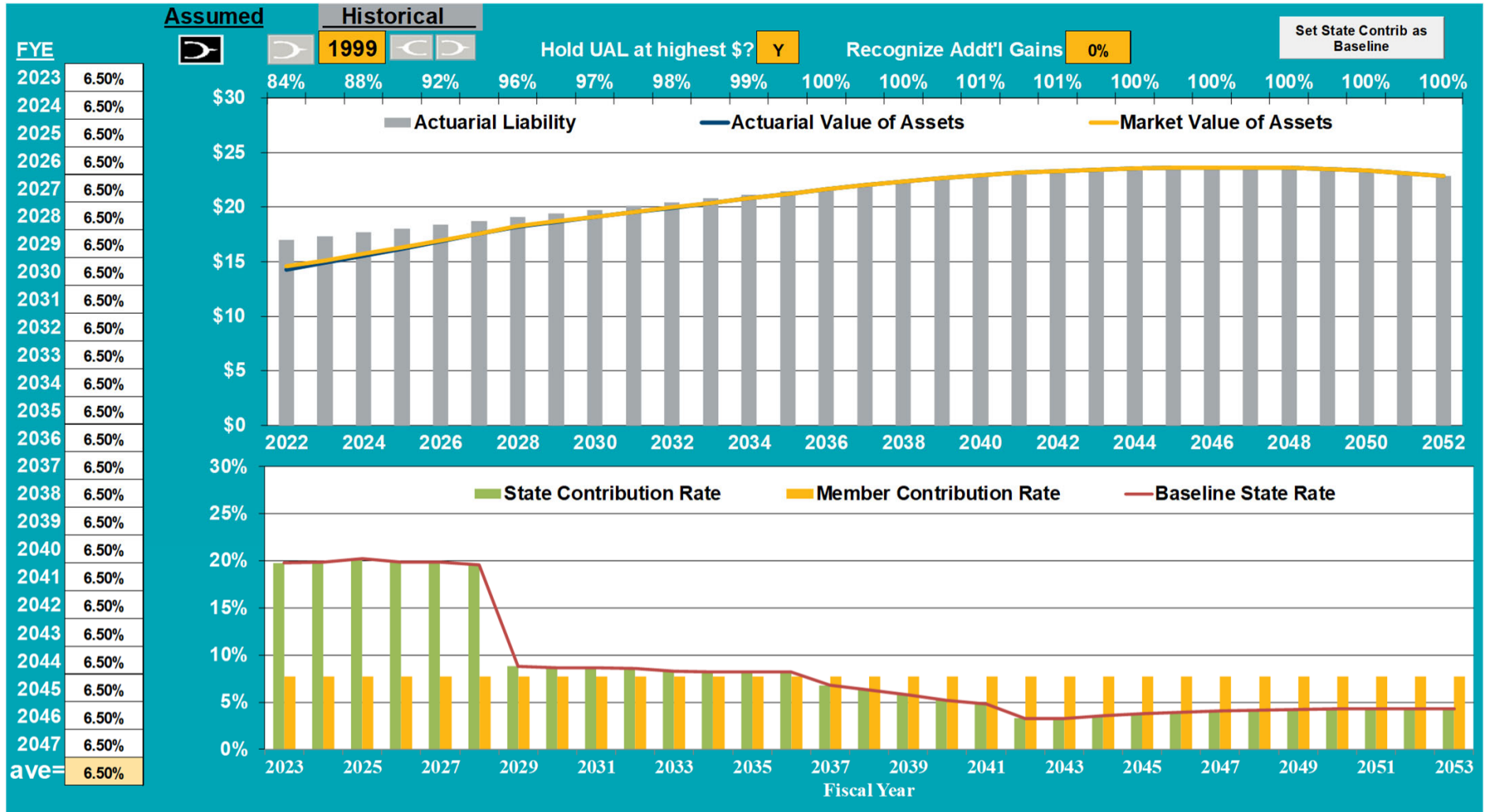


The Board's risk preference is a factor to consider when deciding on a discount rate. The lower the discount rate the lower the amount of return seeking (i.e. risky) assets needed to achieve that assumed rate of return.



5. Plan Dynamics

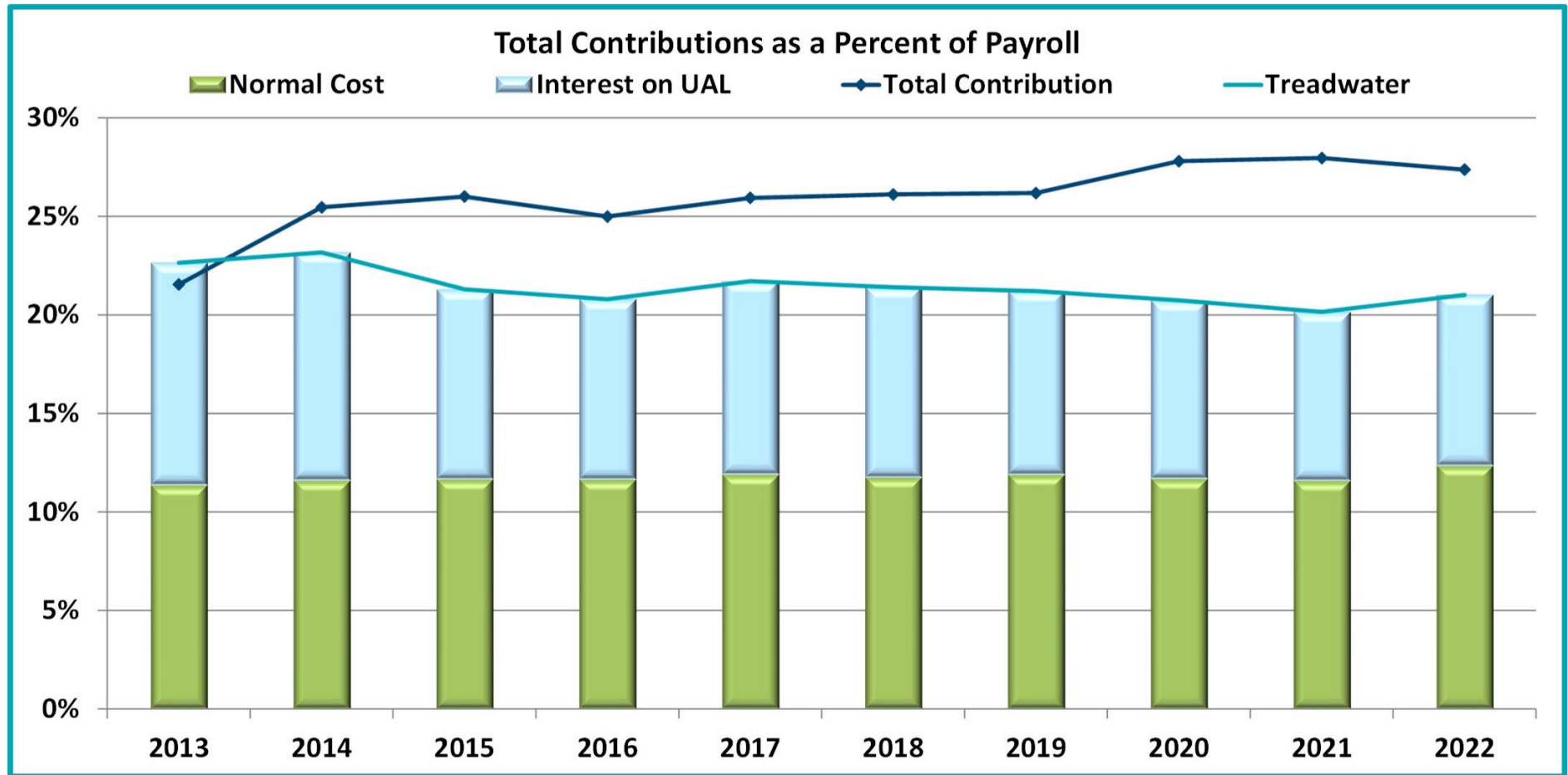
State and Teachers



Tread-Water (Normal Cost + Interest on the UAL)



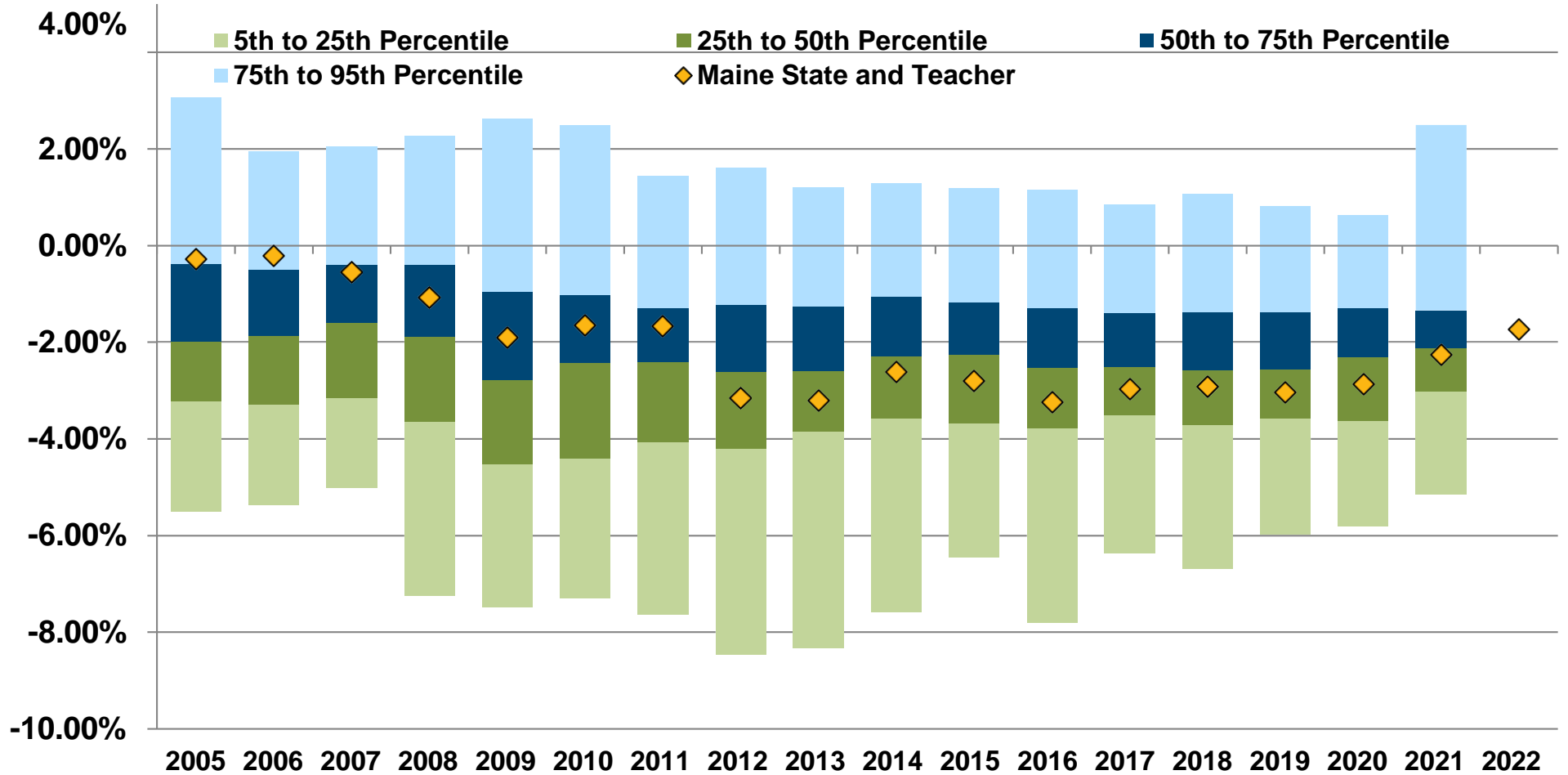
State and Teachers





Net Cash Flow Rate

Net Cash Flow Rate



Survey Data from Public Plans Data as of 7/21/2022



6. Future Expectations

- Future expectations is the most important factor to consider
- Review Cambridge Associates' expectations
- Review industry's expectations

Cambridge Associates' Expectations



	Asset Classes	Policy Portfolio	Long Term Geometric	RTN Geometric	Blended Geometric	Standard Deviation
Growth Assets	Public Equity	30.0%	8.5%	6.3%	7.6%	16.9%
	Private Equity	12.5%	10.1%	7.5%	9.1%	23.6%
Diversifiers	Diversifiers	7.5%	7.5%	7.6%	7.5%	7.0%
Hard Assets	Infrastructure	10.0%	7.8%	6.6%	7.8%	16.8%
	Real Estate	10.0%	7.7%	2.4%	5.5%	20.0%
	Natural Resources	5.0%	7.5%	5.6%	6.8%	18.2%
Credit	Traditional Credit	5.0%	5.7%	6.4%	6.0%	8.0%
	Alternative Credit	10.0%	9.9%	10.4%	10.1%	12.0%
Monetary Hedge	US Government	10.0%	4.8%	4.9%	4.9%	6.0%

Nominal Geometric Return	8.1%
--------------------------	------

Standard Deviation	10.9%
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Source: Cambridge Associates
December 2022

Industry: Horizon Annual Survey



- AJ Gallagher
- Alan Biller and Co Consulting
- Aon
- The Atlanta Consulting Group
- Bank of New York Mellon
- BlackRock
- Callan Associates
- Cambridge Associates
- CapTrust
- Investnet
- Goldman Sachs Asset Management
- Graystone Consulting
- Invesco
- IPS, LLC
- Janney Montgomery Scott, LLC
- J.P. Morgan Asset Management
- Marquette Associates
- Meketa Investment Group
- Mercer
- Merrill
- Milligan
- Morgan Stanley
- NEPC
- PFM Asset Management, LLC
- Principal
- Research Affiliates, LLC
- Research Affiliates, LLC
- Royal Bank of Canada
- RVK
- Segal Marco Advisors
- SEI
- Sellwood Consulting
- Truist Investment Advisory
- UBS
- The Vanguard Group
- Verus
- Voya Investment Management
- Wells Fargo
- Willis Towers Watson
- Wilshire

Cambridge Associates vs. Industry



Consultant	Nominal Inflation		Real	Standard Deviation
Cambridge Associates (RTN+EQ*), 2023 Assumptions	8.10%	2.75%	5.35%	10.90%
Cambridge Associates (RTN+EQ*), 2022 Assumptions	6.80%	2.50%	4.30%	11.20%
Horizon (10-year), 2022 Assumptions	7.16%	2.47%	4.69%	12.00%
Horizon (20-year), 2022 Assumptions	7.72%	2.45%	5.27%	12.00%

* Cambridge Associates assumptions are based off of a 10-year Return To Normal assumption set followed by a 15-year equilibrium assumption set.



Inflation Assumptions



Background



- The inflation assumption impacts:
 - Cost-of-Living Adjustment (COLA) assumption for applicable pension benefits
 - Salary increase (besides merit increases)
 - Total Payroll Growth (for MainePERS, it is the same as salary increase assumption)



Inflation – Historical Data

- The Consumer Price Index for All Urban Consumers U.S. City Average* (All Items) for the past 30 years

Year Ending June*	Increase in CPI	Year Ending June*	Increase in CPI
1994	2.49%	2009	-1.43%
1995	3.04%	2010	1.05%
1996	2.75%	2011	3.56%
1997	2.30%	2012	1.66%
1998	1.68%	2013	1.75%
1999	1.96%	2014	2.07%
2000	3.73%	2015	0.12%
2001	3.25%	2016	1.00%
2002	1.07%	2017	1.63%
2003	2.11%	2018	2.87%
2004	3.27%	2019	1.65%
2005	2.53%	2020	0.65%
2006	4.32%	2021	5.39%
2007	2.69%	2022	9.06%
2008	5.02%	2023	4.05%

* June 2023 not yet available, rate shown is May 2023 over May 2022.

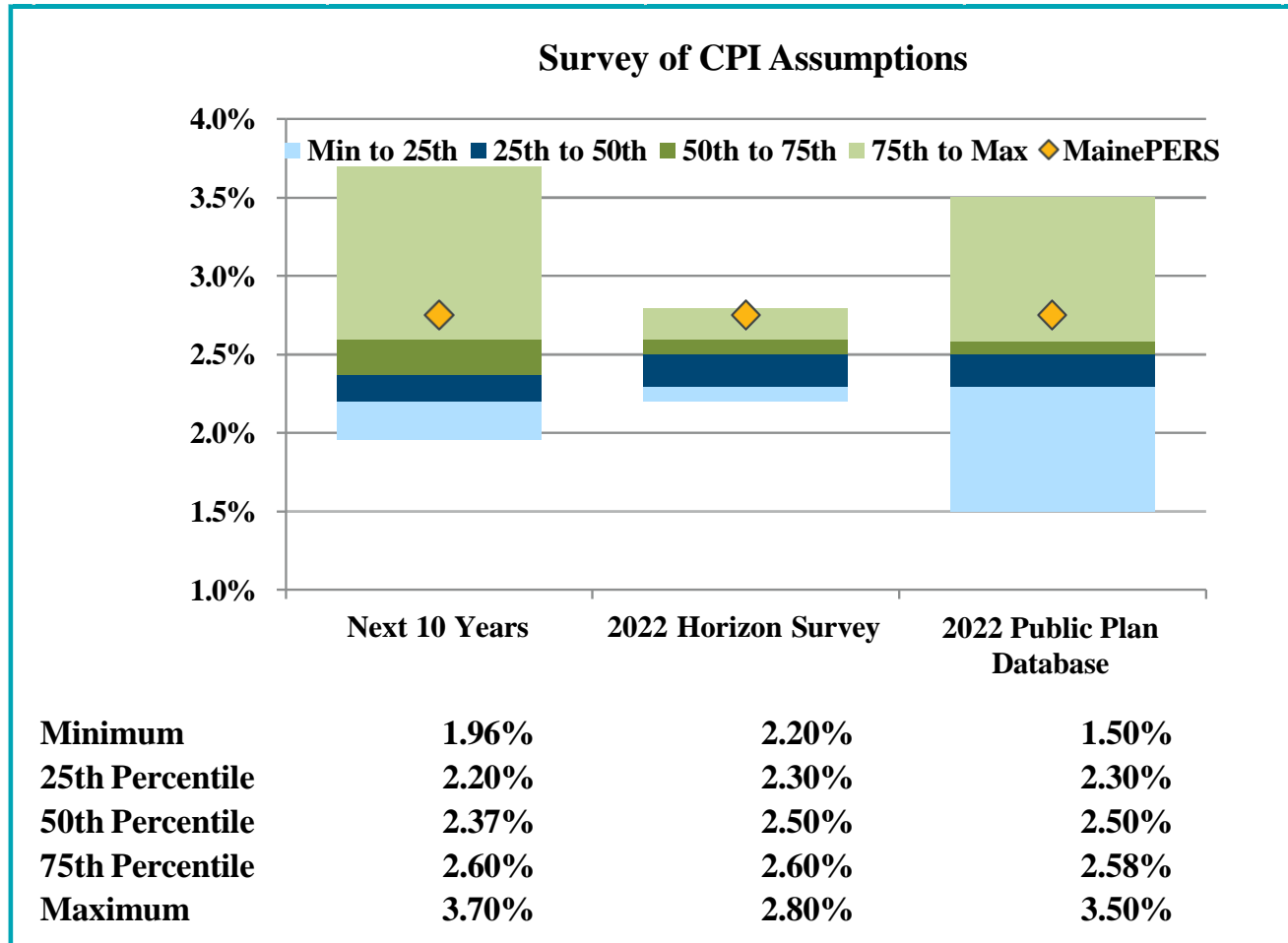
Even when considering recent spike, long-term averages are still under 2.75%

CPI averages through June 2023*		
Time Period	Number of Years	Compound Average
2019 - 2023	5	4.12%
2014 - 2023	10	2.82%
2009 - 2023	15	2.31%
2004 - 2023	20	2.62%
1999 - 2023	25	2.58%
1994 - 2023	30	2.56%



Inflation – CPI Surveys

Survey of economic forecasters* published February 10, 2023



* Research Department of Federal Reserve Bank of Philadelphia



Inflation Based Assumptions

- Salary increase and payroll growth Inflation
 - Currently 2.75% per year
- COLA
 - Currently at 2.2%
 - Reflects adjustment for 3% limit
- Inflation Has Been Volatile
 - Year ending June 2021 – 5.4%
 - Year ending June 2022 – 9.1%
 - Year ending May 2023 – 4.0%

Cheiron Recommendations



- No Changes to Economic Assumptions at this Time
- Maintain
 - Discount Rate: at 6.5%
 - Inflation: at 2.75%
 - Results in COLA assumption of 2.20%
 - Payroll growth
 - Base for salary increases
- Rationale
 - Significant economic uncertainties
 - Long term trends have not been established
 - Economic assumptions should not chase annual expectation movements

Required Disclosures



The purpose of this presentation is to discuss economic actuarial assumptions for the Maine Public Employees Retirement System. This presentation is for the use of the Board and System staff.

In preparing our presentation, we relied on information, some oral and some written, supplied by the Maine Public Employees Retirement System. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Unless otherwise specified, the actuarial assumptions, data, and methods are those used in the preparation of the Actuarial Valuation Report as of June 30, 2022.

The assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent our best estimate for the future experience of the System. The results of this presentation are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the System could vary from our results.

We hereby certify that, to the best of our knowledge, this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This presentation was prepared exclusively for the Maine Public Employees Retirement System for the purpose described herein. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Gene Kalwarski, FSA, EA, MAAA, FCA
Principal Consulting Actuary

Bonnie Rightnour, FSA, EA, MAAA
Principal Consulting Actuary

MAINEPERS**BOARD OF TRUSTEES INVESTMENTS MEMORANDUM**

TO: BOARD MEMBERS
FROM: JAMES BENNETT, CHIEF INVESTMENT OFFICER
SUBJECT: PROXY VOTING
DATE: JULY 5, 2023

Board Policy 2.7 (Engagement) directs that the System vote its proxies in the best interests of its members as pension beneficiaries. The Policy directs the Investment Team to develop and maintain proxy voting guidelines, and to engage a proxy agent for the purpose of voting its proxies. The System currently engages Glass Lewis to serve as proxy agent.

The below items follow this memo:

- FY23 Proxy Voting Summary Report
- Board Policy 2.7 – Engagement
- Investments Practice 21.0 – Proxy Voting Implementation Guidelines

POLICY REFERENCE

[Board Policy 2.1 – Investment Policy Statement](#)

[Board Policy 2.7 – Engagement](#)

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

PROXY VOTING AT MAINEPERS

Public company annual meetings typically feature a number of items to be voted on by shareholders, such as Board of Director nominations, ratification of the company's auditor, and various proposals put forward by shareholders. As a reminder, the System's target allocation to Public Equities is 30%. The below table outlines the System's public equity holdings and the proxy voting mechanics for each component.

	Public Equity Portfolio Weight	# of Companies	Holding Structure	Proxy Voting
Domestic Equity				
Russell 1000	57%	1,000	Direct shareholdings	MainePERS / GL
Russell 2000	3%	2,000	ETF	BlackRock
International Equity				
ACWI ex US	40%	≈2,300	Commingled accounts	BlackRock
	100%	≈5,300		

As noted above, Glass Lewis serves as MainePERS' proxy agent, and places individual votes according to the System's proxy guidelines for those shares held directly by MainePERS.

As shown in the attached report, the System cast votes on over 11,000 individual ballot items across nearly 1,000 annual meetings during FY2023. The vast majority of these items (95%) were management proposals (e.g., Board nominations, auditor ratification, and compensation related), while nearly 600 votes were cast on shareholder proposals.

Each ballot proposal is accompanied by management's recommendation with respect to whether or not to support the proposal. In the case of management proposals, the System's proxy guidelines generally align with management's recommendations, and we voted in line with management in nearly 92% of cases. However, in the case of shareholder proposals, the System's voting departs from management's recommendations in a majority (67%) of cases.

MAINEPERS COMMINGLED EQUITY HOLDINGS

As noted above, proxies for shares held in commingled vehicles (including ETFs) are voted by BlackRock. These votes are cast in accordance with BlackRock's proxy voting policy. At a high level, this policy is in line with the System's proxy guidelines and objectives. For example, BlackRock's policy has a high-level goal of advancing corporate governance practices that are aligned with long term shareholder value creation, seeks to align management compensation with financial performance, and supports disclosure of sustainability factors.

SHAREHOLDER ENGAGEMENT

MainePERS selectively engages directly with public companies on matters that encourage the success and long-term growth of its portfolio. Direct engagement is conducted through written communication to companies, urging the Board of Directors to reconsider their stance on

proposed ballot items. For FY2023, the Investment Team wrote 14 letters to companies, with the majority (13 out of 14) being Shareholder Proposals regarding Board Chair independence. In one particular instance, the target company responded and provided the rationale for opposing the proposal to separate the roles of CEO and Board Chair.

Proposal Statistics Report

From 7/1/2022 to 6/30/2023

	Mgmt Proposals	SHP Proposals	Total Proposals
For	9245	299	9544
Against	815	197	1012
Abstain	11	102	113
1 Year	614	0	614
2 Years	0	0	0
3 Years	0	0	0
Mixed	0	0	0
Take No Action	0	0	0
Unvoted	0	0	0
Totals	10685	598	11283

Management Proposals – Votes Cast

For - 9245 Abstain - 11 1 Year - 614
 Against - 815



Shareholder Proposals – Votes Cast

For - 299 Against - 197 Abstain - 102



	Mgmt Proposals	SHP Proposals	Total Proposals
With Management	9814	195	10009
Against Management	864	400	1264
N/A	7	3	10
Mixed	0	0	0
Take No Action	0	0	0
Unvoted	0	0	0
Totals	10685	598	11283

Management Proposals – Votes versus Management

With Mgmt - 9814 N/A - 7
 Against Mgmt - 864



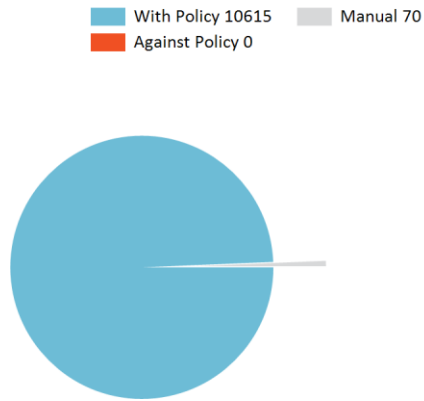
Shareholder Proposals – Votes versus Management

With Mgmt - 195 N/A - 3
 Against Mgmt - 400

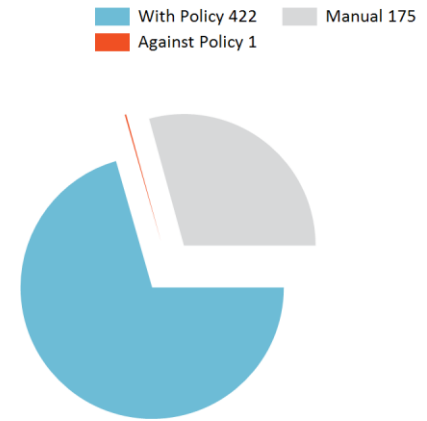


	Mgmt Proposals	SHP Proposals	Total Proposals
With Policy	10615	422	11037
Against Policy	0	1	1
Manual	70	175	245
N/A	0	0	0
Mixed	0	0	0
Take No Action	0	0	0
Unvoted	0	0	0
Totals	10685	598	11283

Management Proposals - Votes versus Policy

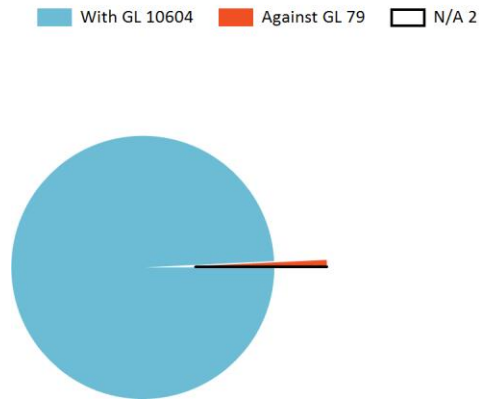


Shareholder Proposals - Votes versus Policy

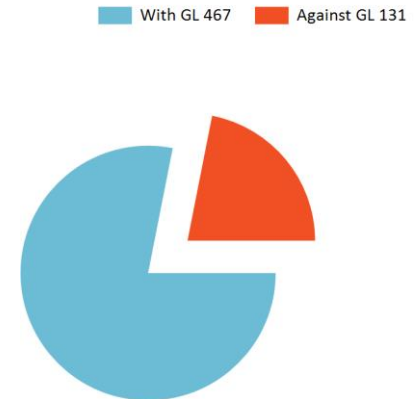


	Mgmt Proposals	SHP Proposals	Total Proposals
With Glass Lewis	10604	467	11071
Against Glass Lewis	79	131	210
N/A	2	0	2
Mixed	0	0	0
Take No Action	0	0	0
Unvoted	0	0	0
Totals	10685	598	11283

Management Proposals - Votes versus Glass Lewis



Shareholder Proposals - Votes versus Glass Lewis



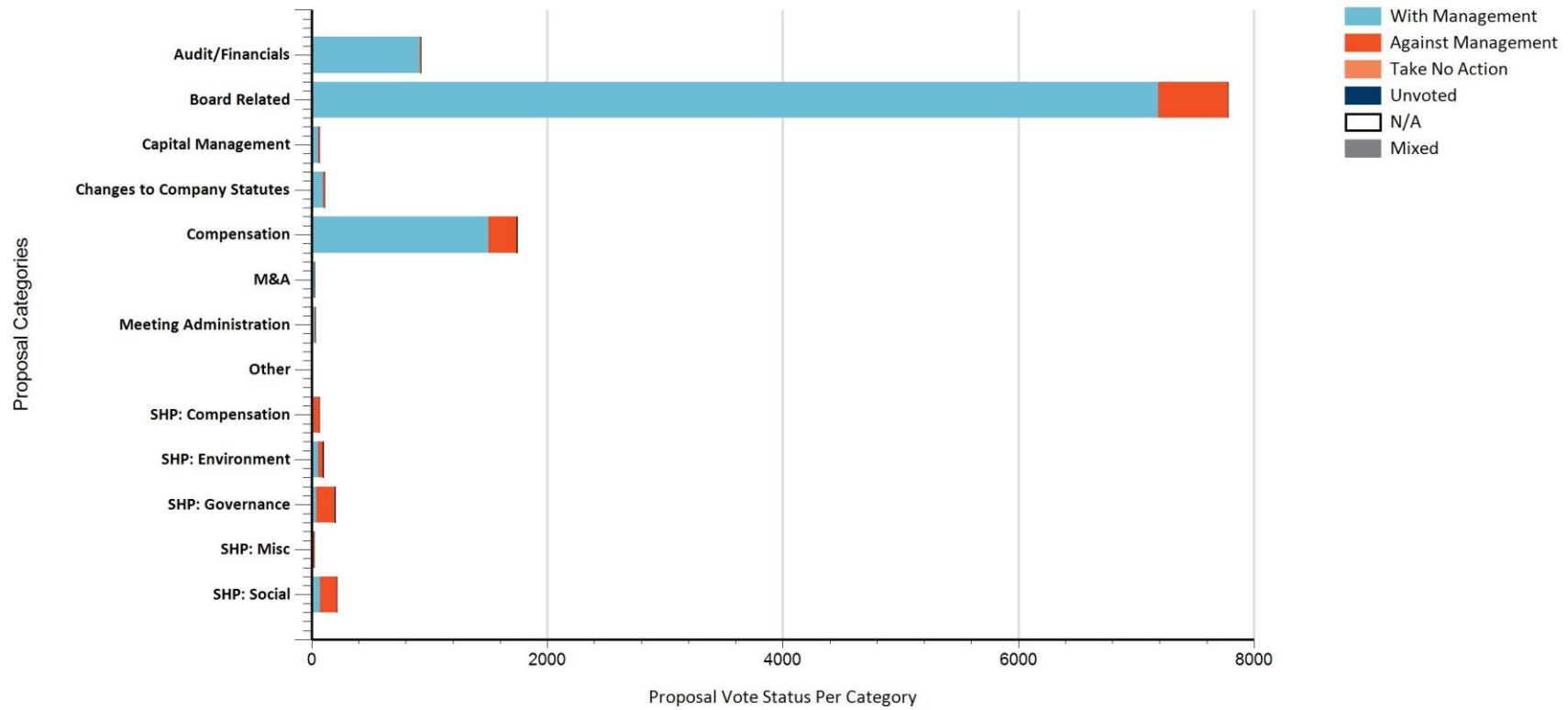
Proposal Category Report

From 7/1/2022 to 6/30/2023

Proposal Categories - All Votes

Proposal Category Type	For	Against	Abstain	Take No Action	Unvoted	Mixed	1 Year	2 Years	3 Years	Total
Totals	9544	1012	113	0	0	0	614	0	0	11283
Audit/Financials	922	5	0	0	0	0	0	0	0	927
Board Related	7198	573	8	0	0	0	0	0	0	7779
Capital Management	58	9	0	0	0	0	0	0	0	67
Changes to Company Statutes	97	11	3	0	0	0	0	0	0	111
Compensation	917	213	0	0	0	0	614	0	0	1744
M&A	24	1	0	0	0	0	0	0	0	25
Meeting Administration	27	3	0	0	0	0	0	0	0	30
Other	2	0	0	0	0	0	0	0	0	2
SHP: Compensation	40	14	13	0	0	0	0	0	0	67
SHP: Environment	29	57	11	0	0	0	0	0	0	97
SHP: Governance	152	45	2	0	0	0	0	0	0	199
SHP: Misc	10	9	0	0	0	0	0	0	0	19
SHP: Social	68	72	76	0	0	0	0	0	0	216

Proposal Categories - Votes versus Management



Proposal Categories - Votes versus Management

Proposal Category Type	With Management	Against Management	Take No Action	Unvoted	N/A	Mixed	Total
Totals	10009	1264	0	0	10	0	11283
Audit/Financials	919	8	0	0	0	0	927
Board Related	7190	589	0	0	0	0	7779
Capital Management	58	9	0	0	0	0	67
Changes to Company Statutes	96	15	0	0	0	0	111

Proposal Category Type	With Management	Against Management	Take No Action	Unvoted	N/A	Mixed	Total
Compensation	1500	239	0	0	5	0	1744
M&A	24	1	0	0	0	0	25
Meeting Administration	27	3	0	0	0	0	30
Other	0	0	0	0	2	0	2
SHP: Compensation	14	53	0	0	0	0	67
SHP: Environment	58	38	0	0	1	0	97
SHP: Governance	42	155	0	0	2	0	199
SHP: Misc	9	10	0	0	0	0	19
SHP: Social	72	144	0	0	0	0	216

Governance Manual

MainePERS Board of Trustees

Board Responsibilities – Investments and Administration

2.7 – Engagement

Date Adopted: February 11, 2016

Date Amended: October 11, 2018; November 18, 2021

Policy

MainePERS is the fiduciary for funds it is assigned to manage. MainePERS shall be a good steward for the funds entrusted to it, managing and investing these funds as a “prudent investor” in accordance with the “exclusive benefit rule” and the laws and Constitution of the State of Maine. MainePERS shall also promote the long-term success of companies with which the System invests through engagement activities.

Statutory/Legal Provisions

- [Me. Const. art. IX, § 18.](#)
- [5 M.R.S. §§ 17102, 17103, 17435; 18-B M.R.S. § 801](#), *et seq.* (Maine Uniform Trust Code); [18-B M.R.S. § 901](#), *et seq.* (Maine Uniform Prudent Investor Act).
- [5 M.R.S. §§ 17153\(4\).](#)
- Restatement (Third) of Trusts § 78(1) (2007) (the “sole interest rule”).
- The Employee Retirement Income Security Act (“ERISA”), codified at [29 U.S.C. § 1002](#), *et seq.*, provides a description of the standard of care that applies to trustees of private sector retirement plans. Although the System as a public retirement plan is not specifically governed by the fiduciary duty standard set forth in ERISA, courts will often consider the standard set forth in ERISA when addressing public pension plan issues. Under ERISA, a fiduciary must act with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person (expert) acting in a like capacity would act. This statutory standard is derived from the common law of trusts, which is applicable in the State of Maine.

Engagement

Engagement is encouraging long-term success and growth of publicly traded companies with whom MainePERS invests through activities such as:

- Direct engagement
- Participating in or sponsoring shareholder litigation
- Proxy voting

Governance Manual

MainePERS Board of Trustees

Direct Engagement

MainePERS will maintain a direct engagement effort consistent with the need for and resources available to encourage the publicly traded companies in its portfolio to achieve long term growth and success, balancing the long term focus of good stewardship with the short term challenges the company faces. Direct engagement opportunities may be based on continuous monitoring of its investments including investment analysis, trade publications, trade organizations, or coordination with other institutional investors.

Direct engagement includes written and oral communication to companies, including attending shareholder meetings and sponsoring shareholder resolutions in unusual circumstances.

Shareholder Litigation

MainePERS will participate in shareholder litigation only to the extent that participation is likely to benefit MainePERS members as pension beneficiaries. MainePERS generally will not assume the role of lead plaintiff in a securities class action unless no other investor with interests similar to MainePERS and sufficient resources to support the litigation is willing to serve as lead plaintiff and the System otherwise will lose the benefit of the litigation to members.

Proxy Voting

MainePERS will vote its proxies in the best interests of its members as pension beneficiaries. This will generally mean focusing on good stewardship by the companies with which MainePERS invests, including:

- Voting to optimize each company's value to shareholders, balancing the long-term focus of good stewardship with the short-term challenges the company faces. Good stewardship includes establishment of effective governance and management practices, responsibility to employee and customer welfare, and responsibility to the environment;
- When there is a conflict between long- and short-term interests, voting shall be in favor of proposals that maximize shareholder control consistent with effective business operations of the company;
- Refraining from voting to further the interests of any group other than the best interests of MainePERS members as pension beneficiaries.

The Chief Executive Officer and Chief Investment Officer shall implement this direction by engaging a proxy voting agent to vote shares of stock owned by MainePERS. The MainePERS investment team shall create, maintain, and update general guidance in the following areas that the proxy voting agent can use to map to proxy votes available to MainePERS:

- Management resolutions
 - Elections of officers
 - Ratification of auditors
 - Governance structure and shareholder rights
 - Compensation

Governance Manual

MainePERS Board of Trustees

- Shareholder proposals
 - Environment
 - Social matters
 - Governance
 - Compensation
- Mergers and proxy contests

The MainePERS Investment team shall work with the proxy voting agent to determine MainePERS' position on proxies not directly covered by the implementation guidance. The Investment team shall monitor the proxy voting agent's implementation of the MainePERS guidance and report semi-annually to the Board of Trustees. The Board may meet with the proxy voting agent from time to time to discuss MainePERS' votes.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

Investment General Practice

21.0 Engagement - Proxy Voting Implementation Guidelines

Summary of Practice

MainePERS Board's Engagement Policy sets broad principles for the voting of System proxies. These principles are based on MainePERS' fiduciary duties, and call for voting in a manner designed to encourage good corporate stewardship and the maintenance of an appropriate balance of long and short-term goals. The Executive Director and Chief Investment Officer are charged with implementing proxy voting in a manner consistent with the System's Engagement Policy. This document contains specific guidance for placing votes on a broad variety of topics.

The System employs a proxy voting agent (currently Glass Lewis) to assist with both the mechanical and decision-making aspects of casting votes on over 15,000 proxy questions annually. The proxy voting agent develops an internal set of voting guidelines consistent with its interpretation of the principles of improving shareholder welfare. These principles and guidelines are used to establish the proxy agent's position on each item to be voted. In situations where MainePERS' guidance would lead to a different vote than the proxy agent's guidelines, the agent places votes so as to reflect MainePERS' guidance. In cases where the proxy agent is unable to determine a voting preference based on MainePERS's guidance, MainePERS is notified and manually places its vote based on internal discussion of the issue.

The attached "Proxy Voting Guidelines" document provides specific guidance as to how the Board's Engagement Policy will be implemented in a variety of specific voting situations.

Statutory/Legal/Policy Provisions

MainePERS Governance Manual, Board Policies 2.1, 2.7, 5.1, 5.2.

Ownership

This Policy is owned by the Chief Investment Officer.

Adopted this 3rd day of March, 2016.



Andrew Sawyer
Chief Investment Officer

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

Proxy Voting Guidelines

Management Resolutions – Board of Directors

Maine PERS generally supports the appointment of directors that protect shareholders' interests and enable companies to achieve long term growth and success. Boards should work to protect and enhance the best interests of shareholders, be at least a majority independent and include members with a record of positive performance with a diversity and depth of experience.

Staggered or Classified Boards

MainePERS generally favors non-staggered¹ and non-classified boards. MainePERS will therefore generally vote:

- Against proposals to establish or protect staggered or classified boards
- In favor of proposals to eliminate classification and staggering
- In favor of proposals for annual election of all directors

Liability/Indemnification of Directors

MainePERS expects directors to act in good faith and in the best interests of the company. MainePERS will therefore generally vote:

- Against proposals to limit/eliminate liability for violation of duty of care.
- Against proposals to indemnify directors in instances of gross negligence.
- In favor of proposals to indemnify where the directors acted in good faith and reasonably believed their action(s) was/were in the best interest of company.

Nomination of Directors

MainePERS will generally vote:

- Against proposals to limit/eliminate shareholders' right to nominate directors, to have a role in filling vacancies or to initiate/compel removal of directors.
- In favor of proposals to provide or protect shareholders' ability to nominate directors, to have a role in filling vacancies or to initiate/compel removal of directors.

Independent Directors

MainePERS is generally in favor of director independence² and therefore will generally vote:

¹ A non-staggered (or non-classified) board features all directors elected to equal length terms at the same time. With a staggered board, only a fraction of directors are elected each year. An example of a staggered board would be one where one third of directors are elected each year, for three year terms. This feature makes hostile takeovers more difficult, as a potential acquirer will need multiple years to obtain board control.

² An independent (or "outside") director is not a current or former employee of the company, is not related to a key employee of the company, and has never worked for a major supplier, customer, service provider, or consultant to the company.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

- Against proposals that would result in a majority of inside directors³.
- Against individual non-independent directors where non-independent directors would or already do comprise a majority of the Board.
- Against individual directors with any material business relationship with the company.
- In favor of proposals calling for appointment of an independent chair.
- In favor of proposals that all, or a majority of, directors be independent.
- In favor of proposals that audit, compensation and/or nominating committees consist entirely of, or a majority of, independent directors.

Directors Ignoring Majority Shareholder Votes

In general, MainePERS will vote:

- Against individual director-candidates put forward by a Board where the candidates serve on a Board committee that has failed to implement shareholder proposals that (i) have received a majority of shareholder votes and (ii) that are in accordance with MainePERS' principles.

Directors – Attendance

MainePERS will generally withhold votes:

- For individual directors who attend fewer than 75% of board and committee meetings.

Directors – Poor Performance

MainePERS will generally withhold votes for directors judged to have poor committee performance. Criteria for poor performance include, but is not limited to:

- Compensation committee: Failing to link pay with performance or for egregious non-performance based compensation
- Governance committee: Adoption of anti-takeover defenses such as poison pill⁴ and classified board.
- Governance committee: Adoption of limits on full legal recourse, such as exclusive forum provisions or fee-shifting bylaws and/or when the company's governing documents are reduced or suspended relating to an important shareholder right such as a takeover protection, ability to call a special meeting.
- Audit committee: Material restatements or un-remediated material weaknesses

³ An inside director is a director who is also an employee (e.g., CEO) or major stakeholder (e.g., labor union representative) of the company.

⁴ A shareholder rights plan, typically referred to as a "poison pill" is a defensive tactic used to prevent a hostile takeover. Once adopted by a company, poison pills are typically triggered when a potential acquirer obtains a given percentage of a company's shares (e.g., 15%) without board approval. The poison pill then allows all other shareholders to acquire new shares at a low cost, effectively diluting the acquirer's stake and making a takeover impossible.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

Management Resolutions – Auditor

Auditor Ratification

MainePERS believes that role of the auditor is crucial in protecting shareholder value and demand the services of objective and well-qualified auditors at all companies. Auditors should be free from conflicts of interest and should assiduously avoid situations that require them to make choices between their own interests and the interests of the shareholders.

MainePERS generally supports management's recommendation regarding the selection of an auditor. However, MainePERS will generally vote against the ratification of auditors for the following reasons:

- When audit fees added to audit-related fees total less than one-half of total fees.
- When there have been any recent restatements or late filings by the company where the auditor bears some responsibility for the restatement or late filing (e.g., a restatement due to a reporting error).
- When the company has aggressive accounting policies.
- When the company has poor disclosure or lack of transparency in financial statements.
- When there are other relationships or issues of concern with the auditor that might suggest a conflict between the interest of the auditor and the interests of shareholders.
- When the company is changing auditors as a result of a disagreement between the company and the auditor on a matter of accounting principles or practices, financial statement disclosure or auditing scope or procedures.

Auditor Rotation

MainePERS typically supports audit related proposals regarding mandatory auditor rotation when the proposal uses a reasonable period of time (usually not less than 5-7 years).

Management Resolutions – Governance Structure and Shareholder Rights

MainePERS generally supports resolutions that enhance shareholder rights.

Anti-Takeover Measures

MainePERS generally opposes strategies implemented to prevent takeovers. MainePERS will therefore generally vote:

- Against proposals to establish, authorize or expand greenmail⁵ payment authority.
- Against proposals to establish, authorize or expand poison pills except in circumstances regarding NOL poison pills⁶ outlined below.

⁵ Greenmail refers to the practice of purchasing shares from a potential acquirer at an above-market price in order to dissuade an attempt at a takeover.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

- In favor of anti-greenmail proposals and restrictions on greenmail payments.
- In favor of proposals to eliminate or limit poison pills except in the circumstance regarding NOL poison pills outlined below.
- In favor of proposals to require shareholder approval of poison pills.
- In favor of proposals to adopt or amend poison pills to include NOL protective provisions if the terms are narrowly tailored to prevent a change in control and in consideration of the value of the NOLs to the company, the likelihood of a change of ownership based on the size of the holding and the nature of the larger shareholders, the trigger threshold, whether the term of the plan is limited in duration or is subject to periodic board review and/or shareholder ratification without unduly limiting takeovers.

One Share-One Vote

MainePERS will generally vote:

- Against proposals to issue shares having greater or lesser voting rights than other shares.
- In favor of proposals to prohibit or limit issuance of unequal-voting shares, or to eliminate dual class share structures.

Confidential/independently-verified voting

MainePERS will generally vote:

- Against proposals to prohibit or eliminate confidential and/or independently verified voting.
- In favor of proposals to institute or expand confidential and/or independently verified voting.

Supermajority bylaw amendment

MainePERS will generally vote:

- Against proposals to adopt supermajority requirement⁷ for amendment of bylaws.
- In favor of proposals to remove supermajority requirement for amendment of bylaws.

Pre-emptive rights

MainePERS will generally vote:

⁶ Net Operating Losses (NOLs) can be used to offset future income and constitute a valuable asset for some corporations. In some circumstances a change of corporate ownership can result in the value of these assets becoming significantly impaired, due to IRS regulations. NOL poison pills are poison pills designed specifically to prevent a change in ownership that would impair NOL assets, and serve to prevent takeovers in general.

⁷ Under a supermajority requirement, bylaw changes require the approval of more than a simple majority of shareholders - typically 2/3 or greater.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

- In favor of proposals to protect or restore shareholders' preemptive rights⁸.
- Against proposals to prohibit, eliminate or restrict shareholders' rights to purchase new share issues before others.

Proxy Access

MainePERS will generally vote:

- Against proposals to deny shareholder access to proxy materials and process for purpose of presenting opposing views on management proposals.
- In favor of expanded proxy access⁹ proposals with terms substantially similar to those proposed by the SEC, e.g., 3% shareholder holding shares for three years can nominate up to 20%/25% of the board.

Related Party Transactions

MainePERS will generally vote:

- Against proposals to narrow the scope of related party transactions requiring scrutiny.
- Against proposals to not provide or to lessen disclosure of related party transactions.
- In favor of proposals to require scrutiny and/or disclosure of related party transactions.
- In favor of proposals that would broaden existing requirements for scrutiny and/or disclosure.

Competing Proposals

MainePERS will generally vote:

- Against proposals that compete with or exclude shareholder proposals with materially preferable terms.

Management Resolutions – Compensation

MainePERS generally supports compensation related resolutions in cases where the company has adequately aligned pay with long term performance.

Stock Options

⁸ Preemptive rights provide existing shareholders with the right to purchase newly-issued before the new shares are offered to the general public. This allows shareholders to avoid dilution of their ownership percentage.

⁹ Currently, corporate management produces proxy material containing their director nominations and various resolutions for shareholder consideration. Proposals for "proxy access" would allow shareholders meeting certain criteria (size of stake and time held) to also place items on the proxies distributed by the company.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

MainePERS believes that appropriate use of stock options can benefit shareholders by more closely aligning company and employee interests. MainePERS will therefore generally vote:

- In favor of proposals that grant stock options broadly to employees, executives and directors.
- Against proposals that limit stock option grants to executives and/or directors or excessively favor executives and/or directors. MainePERS views an option program in which Named Executive Officers receive over 50% of options to be excessively favorable to executives.
- Against proposals that encourage management and directors to focus on near-term stock performance rather than long-term growth in company value.
- Against proposals that would obfuscate or hide dilution and earnings effects of stock options grants.
- In favor of proposals that meaningfully link stock option vesting to long-term growth in company value, e.g., indexed options¹⁰.
- In favor of proposals that would result in disclosure of dilution and earnings effects of stock option grants.

Golden Parachutes

MainePERS generally supports golden parachutes related to mergers as long as amounts are subject to double triggers¹¹ and are reasonable. MainePERS will generally vote:

- In favor of proposals requiring shareholder approval of golden parachutes
- In favor of proposals setting reasonable restrictions or limitations on golden parachutes.
- Against proposals to establish, authorize or expand golden parachutes unless judged reasonable.

Say on Pay

MainePERS will vote:

- In favor of proposals to annual frequency of “say on pay¹²” votes.
- Against proposals to adopt less than annual frequency of say on pay votes.

Rights of Key Employees and Outside Directors to acquire stock and/or participate in appreciated value of stock

MainePERS will generally vote:

¹⁰ An employee stock option that can only be exercised if the company outperforms a given stock index (e.g., the S&P 500).

¹¹ The double triggers are that (i) the merger or acquisition actually occurs, and (ii) the executive’s employment is terminated.

¹² Say on Pay refers to an SEC requirement that shareholders be given the opportunity to vote on executive compensation at least once every three years, and that shareholders also vote on the frequency with which compensation will be considered.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

- Against proposals that excessively dilute (i.e., 10% or greater dilution) shareholder equity.
- Against proposals that permit an exercise price that is less than 100% of fair market value (FMV) on date of option grant.
- In favor of proposals that are incentive-based and not otherwise unacceptable.
- In favor of proposals that require full disclosure of management and director compensation.
- In favor of proposals to require shareholder approval of key employee and director stock option plans.

Shareholder Proposals

Environmental

MainePERS will generally vote:

- In favor of proposals calling for reasonable disclosures of risks or risk mitigation actions related to environmental factors.

Social Matters

MainePERS will generally vote:

- In favor of proposals that would allow charitable contributions and/or that require disclosure of contributions.
- In favor of proposals requesting disclosure of corporate political donations.
- In favor of proposals seeking to advance a social policy or objective when the proposal is expected to positively impact shareholder financial value.
- Against proposals seeking to advance a social policy or objective when the proposal is expected to negatively impact shareholder financial value.
- Abstain from voting on proposals seeking to advance a social policy or objective when the proposal is expected to have no impact on shareholder financial value.
- In favor of proposals calling for or supporting corporate policies or requirements that positively affect employee health and safety.
- Against proposals calling for or supporting corporate policies or requirements that negatively affect employee health and safety.

Governance

MainePERS will generally:

- Vote in favor of proposals to allow shareholders to call special meetings.
- Vote in favor of proposals allowing shareholders to act by written consent.
- Vote in favor of proposals requiring a director to own a minimum amount of company stock.

MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

- Withhold votes from directors owning less than 100 shares of company stock.
- Vote AGAINST proposals to hold the annual meeting somewhere other than where management has proposed. However, MainePERS expects management to take shareholder expense and convenience into account when choosing meeting locations.

Compensation

- MainePERS will generally vote in favor of proposals calling for companies to adopt a policy of not providing tax gross-up payments¹³ to corporate executives, except in situations where gross-ups are provided pursuant to a plan, policy or arrangement applicable to management employees of the company, such as a relocation of expatriate tax equalization policy.
- MainePERS will generally vote in favor of proposals calling for board compensation committees to develop and disclose a policy for reviewing unearned bonus and incentive payments that were awarded to executive officers owing to fraud, financial results that require restatement or some other cause. The policy should require recovery or cancellation of any unearned awards to the extent that it is feasible and practical to do so.

Extraordinary Items

Reincorporation

MainePERS will generally vote:

- Against proposals to reincorporate, whether on- or off-shore, where reincorporation will result in weakening of shareholder rights and/or lesser accountability of management and/or directors. Where off-shore reincorporation is proposed, substantial continuing benefit to company's long-term value must be shown to exist.
- In favor of proposals to reincorporate where reincorporation will result in improved shareholder rights and/or greater management and/or director accountability and, in the case of proposed off-shore reincorporation, where substantial continuing benefit to the company's long-term value is demonstrated to exist.

¹³ Tax gross-up payments are made so such that the net after tax payment received equals an agreed-upon amount.

MAINEPERS

BOARD OF TRUSTEES MEMORANDUM

TO: BOARD MEMBERS
FROM: MICHAEL COLLERAN, CHIEF OPERATING OFFICER & GENERAL COUNSEL
SUBJECT: ENTERPRISE RISK MANAGEMENT
DATE: JULY 5, 2023

The July Board meeting will include a presentation on the System's new Enterprise Risk Management Program and introduce two proposed Board Policy amendments related to the Program that we envision presenting to the Board for approval at a future meeting. A copy of the presentation and the proposed amended policies follow this memo.

POLICY REFERENCE

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

RECOMMENDATION

No Board action is required at this time.



Maine PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Enterprise Risk Management

July 13, 2023

Enterprise Risk Management

Background

- Enterprise-wide risk assessment reporting to the Board is a best practice identified by the Board's governance consultant.
- MainePERS has traditionally reported on risk, but not in a formalized and regular manner.
- We now are adopting an Enterprise Risk Management Program and propose reporting to the Board's Finance and Audit Committee on at least an annual basis.

Enterprise Risk Management

- What is risk?
- What is a risk management program?
- What should a risk management program include?
- Where can you learn more?

Enterprise Risk Management

- Development of the MainePERS Risk Management Program
- Components of the Program
 - Chief Operating Officer and Director of Administration Responsible
 - Risk Register Developed and Maintained by Senior Management Team
 - Ownership of Risks by Senior Managers
 - Reporting Annually and as Needed to the Finance and Audit Committee
 - Including Analysis and Discussion of Risks in Major Board Decisions
- Proposed Board Policy Amendments to Implement the Program
 - Board Policy 1.6 – Finance and Audit Committee
 - Board Policy 4.5 – Board-Staff Relations

Governance Manual

MainePERS Board of Trustees

Board Governance

1.6 – Finance and Audit Committee of the Board

Risk Management

The Committee provides oversight to the System's management of risk. Management shall report at least annually to the Committee on the significant risks facing the System and the steps taken to address those risks. The Committee shall obtain reasonable assurance that management has identified, analyzed, and established a framework for addressing the key risks the System faces.

Board – Chief Executive Officer Coordination

4.5 – Board / Staff Relations

Staff shall provide Trustees with an analysis of relevant risks in support of any major decision.

Enterprise Risk Management

MainePERS Risk Register July 2023

	Risk	Primary Risk Type	Owner	Severity	Speed of Onset	Momentum	Likelihood	Mitigation in Place	Mitigation Needed	Risk Direction
1	Risk of data breach	Reputational	Joy	High	High	9	Medium	Firewall assessments; external and internal pen test; CAVA; VSOC; Tyler Detect; CrowdStrike; PaloAlto firewall; Zix email encryption; Merakis; Cisco ICE network layer protection; mail verification in Doc Center; locked shred containers; employee training; password protected devices; little to no use of local documents	Reduce use of paper containing non-public information; barcoding for imaging; clean desk policy; expand use of encrypted email; reduce retention of nonpublic information; expand use of multifactor authentication	Stable
2	Risk of failure to make benefit payments	Reputational	Sherry	High	High	9	Low	Regular wire transfers between investment trust accounts to BSB - two business days prior to payroll being due to mitigate risk of uninsured funds at BS but assure cash availability; BSB does an "intra-day" collateralization prior to end of the business day; published schedule of due dates for processing; documented procedures for creating bank and print files and back-up assignments three personnel deep; the Brunswick DR site is available for check production if Augusta is unavailable	Testing of back-up systems; added confirmation features to banking transactions to assure bank processes the files	Stable
3	Risk of fraud or theft	Reputational	Sherry	High	High	9	Low	Controls exist in A&F for moving funds out of MainePERS accounts; controls exist in Investments for moving money out of MainePERS accounts; controls exist in Service Programs to prevent distributions from being misdirected; identification procedures required to protect private information and prevent unauthorized transactions; elevation process and V3 security flags for suspicious activity; annual verification of foreign benefit recipients; annual statement of compensation process for disability retirees; internal/external auditing of functions	Assessment of security roles in future Pension Administration System (PAS) software - least privilege as a model; training staff to recognize, respond, and report	Stable
4	Risk of errors in calculating benefits and contributions	Operational	Chip	Medium	High	6	High	Policies; practices; V3 flags; ER errors and exceptions; employer audits; internal audits; verification of calculations; workflow reviews; external audits; member statements; routine data integrity queries; data review and questions from annual actuarial process	Focused data cleanup effort with external resources; migration of manual processes into (PAS) (preferred) or controlled tools; process improvements and routine process reviews; additional automated error/exception flags; ongoing training; recording and tracking of errors; individual staff assessments of error ratios and productivity expectations; increasingly investigating and addressing suspected erroneous data at the time of discovery	Stable
5	Risk of business interruption	Operational	Rebecca	Medium	High	6	Low	Remote work capability; building air filtration and treatment system; business continuity planning & testing; incident response planning; disaster recovery facility; data replication; Airgap; security systems; alarm monitoring; access controls; labor relations	Enhanced BCP departmental testing - failover of technologies; staff adaptability; ongoing training	Stable
6	Risk of failure or inadequacy of financial assets of the Trust	Financial	Jim	High	Medium	6	Low	Actuarial smoothing; risk target consistent with ability to bear risk, and asset allocation consistent with risk target - we are able to experience losses and stick with policy allocations; periodic reviews of risk target		Stable

Enterprise Risk Management

MainePERS Risk Register July 2023

	Risk	Primary Risk Type	Owner	Severity	Speed of Onset	Momentum	Likelihood	Mitigation in Place	Mitigation Needed	Risk Direction
6	Risk of failure or inadequacy of financial assets of the Trust	Financial	Jim	High	Medium	6	Low	Actuarial smoothing. Risk target consistent with ability to bear risk, and asset allocation consistent with risk target - we are able to experience losses and stick with policy allocations. Periodic reviews of risk target		Stable
7	Risk of adverse legislative actions	Strategic	Kathy	High	Medium	6	Low	Maintain credibility with Legislature and Governor's office; respond quickly and appropriately to constituent issues; maintain relations with stakeholders; mitigate volatility in contribution rates; stay informed on legislative trends elsewhere	Improved elevation of member issues and legislative contacts; reduction of backlogs and errors	Stable
8	Risk of failure of Board governance and functioning	Strategic	Mike	High	Medium	6	Low	Board education; onboarding of new Board members; Board governance manual; maintain credibility with Governor's office; maintain relations with stakeholders	Educate stakeholders about the value of qualities needed in board nominees.	Stable
9	Risk of employee injury or death	Operational	Rebecca	Medium	High	6	Low	Daily building inspections for potential hazards, ergonomics training, maintenance of MDSS, first aid and trauma kits, AED units, fire drills, armed aggressor training, building control systems, overall staff security training, VDT examinations and glasses	Employee focus groups on concerns and mitigation. Expanded training for all.	Stable
10	Risk of inability to recruit & retain personnel	Operational	Mike	Medium	Medium	4	Medium	Policies, practices, dedicated trainers, training materials, succession planning; compensation; benefits; hybrid work; labor relations; staff engagement; events committee; values committee; metrics monitoring; compensation studies	Improved training and support for trainers; documentation of institutional knowledge; implementation of succession plans; maintain forward momentum on improvements to work environment; expand recruiting tools (e.g., tools we use, where we post, analysis of effectiveness); adjust compensation/benefits package to remain attractive to prospective employees; develop processes and expand automation to reduce reliance on expertise	Increasing
11	Risk of failed technology implementation	Operational	Joy	Medium	Medium	4	Medium	Cross-departmental implementation teams with regular meetings; use of consultant to help design LOB RFP and assist with selection and onboarding; creation of Director of IT and business analyst positions; movement of LOB unit to IT; expansion of IT development staff; financial resources devoted to projects	Give appropriate priority and resources to implementation; pursue contract provisions to protect MainePERS from vendor-caused failure; consider during any transition to a new tool whether at least a temporary legacy or otherwise redundant system is feasible to have in place as a failsafe in the event the new system needs to be abandoned before, during, or shortly subsequent to launch.	Stable
12	Risk of noncompliance with legal requirements	Legal	Mike	Medium	Medium	4	Low	Compliance program; internal audits; employer audits; pension counsel; periodic reviews of DC plan documents; monitoring of federal and state law changes	Flagging, recording, and tracking of errors; sufficient resources to meet compliance requirements (e.g., PB to Final); external review of DB plan documents	Stable
13	Risk of vendor failure to perform	Operational	Mike	Medium	Medium	4	Low	Vendor selection process; vendor management program; insurance requirements; some cash held in BSB investment trust accounts & BSB "intra-day" collateralization	Expand vendor management program to use as a predictive tool. Put emphasis on vendor performance rather than just financial and security risk	Stable

Enterprise Risk Management

MainePERS Risk Register July 2023

	Risk	Primary Risk Type	Owner	Severity	Speed of Onset	Momentum	Likelihood	Mitigation in Place	Mitigation Needed	Risk Direction
15	Risk of property damage or loss	Operational	Rebecca	Low	High	3	Low	Preventative maintenance; planning for replacements; inspections; third party review; monitoring and alarm systems; facility manager and public safety responses to alarms; security and safety training for personnel; building access controls; insurance; defensive driver training	Maintain relationships with vendors and local authorities through transition to new Facilities Manager	Stable
16	Risk of inability to adapt and change	Operational	Mike	Medium	Low	2	Medium	Member surveys; strategic plan & objectives; professional development opportunities; culture change & support activities; performance reviews for all employees including confidential staff; measurement and communication of progress toward goals; recruitment and retention of personnel with desired skills	Consider inclusion of factors like innovation and adaptability in job descriptions and hiring; also encourage existing staff to understand and engage in the same endeavor; consider use of employee focus groups (including confidential employees) with regular meetings	Stable

Enterprise Risk Management

Top Risks as of July 2023

1. Risk of Data Breach
2. Risk of Failure to Make Benefit Payments
3. Risk of Fraud or Theft
4. Risk of Errors in Calculating Benefits and Contributions

Governance Manual

MainePERS Board of Trustees

Board Governance

1.6 – Finance and Audit Committee of the Board

Date Adopted: October 9, 2003

Date Amended: December 13, 2012; March 13, 2014; October 13, 2016; May 9, 2019;

November 18, 2021; [August 10, 2023](#)

Policy

The Finance and Audit Committee (Committee) is a standing committee of the Board of Trustees with duties and responsibilities as set forth in this policy. The Committee is responsible for overseeing the integrity of the System’s budgeting, financial accounting and reporting, audits, internal controls, and [risk management compliance](#). It coordinates communication to and within the Board of Trustees, the System’s external auditors, the System’s internal auditors and System management. The Committee recommends actions to the Board of Trustees, but has no independent authority to make final decisions.

Statutory/Legal Provisions

- [5 M.R.S. §§ 17103](#), [17104](#) and [17109](#).

Membership, Expertise and Meetings of the Finance and Audit Committee

Membership

The Committee consists of at least three members of the Board of Trustees, at least one of whom must be qualified through training or experience in the field of investments, accounting, banking or insurance, or as actuaries. Committee members will be appointed or removed by the Board Chair with the concurrence of the number of Board members required by law for Board action. The Board Chair may appoint him/herself as a Committee member, but may not serve as Chair of the Committee. Appointments are for two years and may be renewed without limit. Vacancies within a term shall be filled in the same manner. The Committee shall select the Chair and Vice Chair in February of each year.

Expertise

The members of the Committee, individually or as a group, must, in the Board’s determination, possess sufficient financial knowledge and experience to understand the nature of the work performed by the System’s external and internal auditors and the reports prepared by them. If the Committee does not have the necessary knowledge and expertise, the Board must provide the Committee with, or authorize the Committee to obtain, an external advisor from a source independent of both System staff and the System’s external auditors.

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MainePERS Board of Trustees

Meetings

The Committee shall meet quarterly or as circumstances require, but at least twice in each fiscal year. ~~Committee members must be physically present to vote on matters forwarded to the Board of Trustees.~~

Responsibilities of the Finance and Audit Committee

General Responsibilities

The Committee is responsible for oversight of the System's budgeting, financial reporting, external audits, and internal audit functions (which may be outsourced), including periodic reviews of external and internal audit work plans and reports. The Committee also oversees the System's risk management. The Committee is responsible to inform the Board as needed on matters that it oversees, but at least twice in each fiscal year.

Annual Budget

The Committee is responsible to:

- Review the annual budget prior to the beginning of the fiscal year;
- Make any adjustments deemed necessary by the Committee; and
- Recommend approval of the annual budget to the Board.

Annual Audit

The Committee is responsible to:

- Review the audit plan, in advance of the audit;
- Review proposed adjustments to the financial statements;
- Assess the financial statements as a whole;
- Review with the Chief Executive Officer, Chief Operating Officer, and ~~Director of Finance~~ Chief Financial Officer, with or without the presence of the external auditor, the result of the auditor's annual audit and plans to address any comments therein; and
- Report to the Board on the financial statements and audit shortly after the completion of the audit.

Internal Controls

The Committee is responsible to assure, by reports from and/or discussions with management and/or the internal auditor and/or the external auditor that:

- the System's internal controls, including without limitation fraud controls, and procedures for its operations are adequate and effective;

Governance Manual

MainePERS Board of Trustees

- the System's internal controls and procedures are evaluated with appropriate frequency to assure that they continue to be adequate and effective;
- significant defects in or failures of the System's internal controls, including without limitation any instance of fraud or misuse of System data or information, are reported to the Committee in a timely manner and that corrective actions are undertaken and completed in a timely manner; and
- where such reports are from and/or discussions with management, the internal and/or external auditor, as the Committee deems appropriate, is aware of them and either does not have a view different from management's or that any different view is made known to the Committee.

Information, Concerns and Complaints

The Committee is responsible to oversee the establishment of procedures by which information, concerns and complaints regarding accounting, internal controls, and auditing matters are received, evaluated, and responded to by management and/or the Committee itself. Where the procedure calls for or permits the submission of such information, concerns and complaints to management, it must also require management to report to the Committee at appropriate intervals on such submissions and their handling.

The Committee is responsible to establish a procedure for the confidential and/or anonymous submission by MainePERS employees to the Committee itself of concerns regarding accounting, internal controls or auditing matters and for response by the Committee.

Risk Management

The Committee provides oversight to the System's management of risk. Management shall report at least annually to the Committee on the significant risks facing the System and the steps taken to address those risks. The Committee shall obtain reasonable assurance that management has identified, analyzed, and established a framework for addressing the key risks the System faces.

External Auditor

Engagement, Evaluation, Compensation, and Termination

The Committee shall oversee the process by which the external auditor is hired, evaluated, and terminated as well as the terms of the contract of engagement. The Committee shall ensure that the external auditor is engaged through an open bid process with a written contract for a term not to exceed five years. The contract may be extended up to a total period of time under contract of ten years. The Committee shall evaluate the external auditor performance at the annual exit conference and formally at every contract extension. The Committee shall recommend the engagement, compensation and termination of the external auditor to the Board.

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MainePERS Board of Trustees

Auditor Rotation and Future Employment at System

The Committee shall ensure, in the case of the continuing engagement of an external audit firm that either the lead or the concurring audit partner is rotated at least every five years and that, once rotated, no lead or concurring partner serves again on the System's audit for three years. When the Committee finds that the five-year requirement is impracticable and that waiving it will not compromise the audit function or the System, the Committee may waive the requirement. A waiver may be for a one-year period only, though a waiver may be renewed. No partner shall serve on the System's audit for more than eight consecutive years.

An employee of the external auditor who served on the MainePERS audit team may not become an employee of the System within one year of the annual audit unless the Committee has reviewed the request to determine that no conflicts exist and recommends to the Board that the employment be approved.

Meetings and Communication with Auditor

The Committee shall meet with the external auditor for formal audit entrance and exit conferences, and whenever the Committee decides that a meeting is indicated. The Committee may include System management in all or part of any meeting with the auditors, but must meet with the auditor without management during at least one meeting in each fiscal year. The Committee shall direct the auditor to report any critical accounting or reporting issue or issue with management in a timely manner. The Committee is responsible to meet with the auditor whenever the auditor requests such a meeting. The Committee shall provide the external auditor with contact information that enables the external auditor to contact the Committee directly.

Non-audit Services

An external auditor who performs an annual audit of the System's financial condition may not provide any non-audit services to the System in the fiscal year that a given financial audit covers or during the period in which the annual financial audit is being performed, unless the Committee recommends to the Board that the provision of such services be approved.

Internal Auditor

Staffing the Internal Audit Function

The internal audit function may be staffed by one or more System employees or by one or more independent audit firms. If the Chief Executive Officer determines that one or more independent audit firms should be engaged for this function, those firms will be selected using the System's competitive bid process.

Regular Reports

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MainePERS Board of Trustees

The Internal Auditor shall provide an annual work plan to the Committee and quarterly reports of progress thereon and as to other matters of which the internal auditor believes the Committee should be aware. In the case of outsourced internal audit functions, the Chief Executive Officer shall provide the annual work plan and quarterly reports of progress. The Chief Executive Officer may delegate this responsibility to the Chief Operating Officer or the ~~Director of Finance~~Chief Financial Officer.

Auditor Access to the Finance and Audit Committee

The Internal Auditor shall provide reports directly to the Committee. In the case of an outsourced internal audit function, these reports will be provided by the Chief Executive Officer or, if designated, the Chief Operating Officer or ~~Director of Finance~~Chief Financial Officer. The Internal Auditor shall also have direct access to the Committee when the Internal Auditor deems it necessary.

Particular Projects and Reports

The Committee may direct an internal audit examination and/or report to the Committee itself and/or to management on any System matter that the Committee believes to require such examination and/or report.

Governance Manual

MainePERS Board of Trustees

Board – Chief Executive Officer Coordination

4.5 – Board / Staff Relations

Date Adopted: June 13, 2013

Date Amended: November 14, 2019; November 10, 2022; [August 10, 2023](#)

Policy

Trustees shall in part fulfill their fiduciary duty through reliance on trained and experienced qualified professional staff. The Chief Executive Officer shall ensure that only trained and experienced qualified staff support Trustees in fulfilling their duty.

Staff/Board Relations

Staff shall prepare an appropriate level of information and education for Trustees to fulfill their fiduciary role and monitor System operations.

Staff shall work to provide relevant information to Trustees, including metrics that enable Trustees to effectively monitor the operating outcomes of Board policy. Staff shall also thoroughly research and prepare background material for all decisions required or collectively requested by Trustees. Trustees shall be provided with a set of options along with supporting reasoning for each requested decision, and the option recommended by staff along with supporting reasoning. [Staff shall provide Trustees with an analysis of relevant risks in support of any major decision.](#)

MAINEPERS

BOARD OF TRUSTEES LEGISLATIVE MEMORANDUM

TO: BOARD MEMBERS
FROM: KATHY MORIN, DIRECTOR, ACTUARIAL AND LEGISLATIVE AFFAIRS
SUBJECT: LEGISLATIVE UPDATE
DATE: JULY 5, 2023

The First Regular Session of the 131st Legislature convened on December 7, 2022 and adjourned on March 30, 2023. The First Special Session of the 131st Legislature convened on April 5, 2023, and all bills not yet acted upon in the First Regular Session were carried over to the First Special Session.

POLICY REFERENCE

[Board Policy 3.1 - Reporting](#)

[Board Policy 3.2 - Legislation](#)

[Board Policy 4.5 - Board/Staff Relations](#)

[Board Policy 4.6 - Communications and Support to the Board](#)

COMMITTEE OF JURISDICTION

The Committee on Labor and Housing remains the committee of jurisdiction for MainePERS-related matters.

SESSION BILLS

The following bills pertaining to MainePERS are being considered this session. The current status of each bill is provided, with significant updates from last month italicized.

L.D. 70 - COLA BASE

This bill would eliminate the COLA Base, which is the level of benefit that is subject to a cost-of-living adjustment (COLA). This applies to retirees from the State-sponsored plans. A public hearing was held on February 14. A work session was held on March 9, at which the bill

was unanimously voted ought to pass as amended, with the amendment to establish the COLA Base at \$40,000. The bill was enacted by the House and **placed on the Special Appropriations Table.**

L.D. 106 - SERVICE CREDIT

This bill would allow a member who has completed an established percentage of the special plan to continue to earn special plan credit upon transfer to a regular plan position. The bill was amended to strike the original language and replace it with language that permits a member who retires under a special plan and who also has service under a regular plan, to which an early retirement reduction would apply, to defer receipt of that portion of the benefit until normal retirement age.

This bill was enacted as PL 2023, c. 208, and will be effective 90 days after adjournment. A copy of the enacted law is included with this memo.

L.D. 185 - TEACHER EARLY RETIREMENT

This bill would change the early retirement reduction that applies to teachers with at least thirty-five years of service credit. The bill was amended to reduce the early retirement reduction from the current reduction of 6% per year to 5% per year versus the 2% originally proposed in the bill. *The bill was enacted by the House and placed on the Special Appropriations Table.*

L.D. 197 - SPECIAL PLAN FOR CRIME LAB/COMPUTER CRIMES UNIT

This bill would move certain employees in the Department of Public Safety, Computer Crime Laboratory or computer crimes unit from the 1998 Special Plan to the 25 year, regardless of age, special plan. *It is our understanding that the budget bill (L.D. 258) includes the language and funding to address the issue raised in L.D. 197.*

L.D. 206 - FY 2023 SUPPLEMENTAL BUDGET

Part J of the proposed supplemental budget would provide a one-time, non-cumulative 1% cost-of-living adjustment for eligible retirees from the State-sponsored plans.

The budget was **enacted as PL 2023, c. 3**, effective February 2, 2023, and included the one-time COLA provision.

L.D. 258 - FY 2024-2025 BIENNIAL BUDGET

Part **HHHHH** of the proposed budget would provide a one-time, non-cumulative 3% cost-of-living adjustment (COLA) for eligible retirees from the State-sponsored plans. *Budget work has been completed by the Appropriations Committee and will now be considered by the House and Senate. The budget being voted upon includes the one-time COLA payment.*

L.D. 313 - SPECIAL PLANS FOR LAW ENFORCEMENT

This concept draft aligns retirement plans for certain law enforcement officers. The bill was amended to permit an employee or employer to elect to pay the cost to transfer service from one special plan to another special plan. The amended bill also addresses a service purchase issue for specific PLO members.

This bill was enacted as PL 2023, c. 246, and will be effective 90 days after adjournment. A copy of the enacted law is included with this memo.

L.D. 424 - FY 2024-2025 BIENNIAL BUDGET

This bill is the biennial budget **enacted as PL 2023, c. 17**, effective March 31, 2023. It includes required funding for normal cost and unfunded liability costs for the State-sponsored plans. It also includes required funding for retired teacher group life insurance and the pay-as-you-go Governor's Retirement Plan.

L.D. 426 - MILITARY SERVICE PURCHASE

This bill expands the periods of military service that eligible members may purchase at a subsidized rate. The bill was amended to add a requirement that the System report back on the experience under the new law. *The bill was enacted by the House and placed on the Special Appropriations Table.*

L.D. 483 - RETROACTIVE SPECIAL PLAN COVERAGE

This bill provides retroactive special plan coverage for certain employees of the Department of Corrections. *The bill was enacted by the House and placed on the Special Appropriations Table.*

L.D. 610 -EXPAND 1998 SPECIAL PLAN -MEDICAL EXAMINER EMPLOYEES

This bill would allow certain employees in the Office of the Chief Medical Examiner who are currently included in the regular plan to be covered instead by the 1998 Special Plan. The bill was amended to change the effective date of special plan coverage to October 1, 2023. *The bill was enacted by the House and placed on the Special Appropriations Table.*

L.D. 635 -RETIRE-REHIRE FOR LAW ENFORCEMENT OFFICERS

This bill would allow retired law enforcement officers to be hired as a school resource officer without any impact to their current retirement benefits. A public hearing was held on March 2, at which the bill was unanimously **voted ought not to pass** at the sponsor's request.

L.D. 733 -ANNUAL STATEMENTS

This bill requires employers and MainePERS to provide an annual benefits statement and specifies what must be included in the statement. A public hearing was held on March 28. A work session was held on March 10, at which the bill was unanimously **voted ought not to pass**.

L.D. 742- DIVESTMENT

This bill requires MainePERS to no longer invest in companies that are boycotting Maine lobster and to divest of current holdings, in accordance with sound investment criteria and consistent with the Board's fiduciary obligations. A public hearing was held on March 9. A work session was held on April 4, at which the bill was unanimously **voted ought not to pass**.

L.D. 882 -LOCAL DISTRICT DEFINITION EXPANSION

This bill would allow certain non-municipal emergency medical service providers to participate in the Participating Local District Consolidated Retirement Plan. A public hearing was held on March 28, at which the bill was unanimously **voted ought not to pass** at the sponsor's request.

L.D. 926 -MAINEPERS REPRESENTATION

The stated intent of this concept draft is to improve MainePERS representation. A public hearing has not yet been scheduled. *This bill will likely be carried over to the Second Session.*

L.D. 1023- IRREVOCABLE BUDGET TRUST FUND

This bill would establish an Irrevocable Budget Trust Fund and requires that a portion of the trust funds be invested through MainePERS. A public hearing was held on April 24. A work session was held on May 9, at which the bill was unanimously **voted ought not to pass**.

L.D. 1082 - MAINE RETIREMENT SAVINGS PROGRAM

This bill makes several changes to the Maine Retirement Savings Program. Section 15 of the bill is the only section relevant to MainePERS. That section makes employees of the Maine Retirement Savings Board eligible for participation in the MaineSTART plans offered by MainePERS.

This bill was enacted as PL 2023, c. 167, and will be effective 90 days after adjournment.

L.D. 1096 - COLA CAP

This bill would change the index on which COLA for MainePERS retirees is based from the CPI-U to the CPI-W, for the Northeast Region. It would also eliminate the 3% COLA cap currently in effect. The bill was amended to strike the two original provisions and to instead provide an additional 2% cumulative COLA effective September 2022. *The bill was enacted by the House and placed on the Special Appropriations Table.*

L.D. 1123- REBUTTABLE PRESUMPTION

This bill would create a rebuttable presumption of disability for law enforcement officers who suffer specific injuries or diseases. The bill was amended to strike the language that pertained to the MainePERS disability program. Therefore, it is **no longer relevant** to MainePERS.

L.D. 1152- LONG-TERM DISABILITY INSURANCE

This bill requires the Board to offer long-term disability insurance coverage to participating employers, and requires employers to pay the full cost of that coverage. This bill is the version of the proposed legislation included in the November 2022 Long-Term Disability Insurance Implementation Plan that was favored by the labor members of the stakeholder group. A public hearing was held on April 4. A work session was held on May 16, at which the bill was tabled. This bill will likely be **carried over** to the Second Session.

L.D. 1230-WEP/GPO INTERSTATE COMPACT

This bill directs the System to study the creation and adoption of an interstate compact with other states affected by the WEP and GPO.

This bill was enacted as Resolve 2023, c. 23, and will be effective 90 days after adjournment. A copy of the enacted law is included with this memo.

L.D. 1424 - DEPARTMENT OF CORRECTIONS SPECIAL PLAN

This bill appears to provide retroactive 1998 Special Plan coverage for all Department of Corrections employees whose positions are covered by that plan. A public hearing was held on April 19. A work session was held on May 17, at which the bill was tabled. This bill will likely be **carried over** to the Second Session.

L.D. 1425 - RECORDING OF PUBLIC MEETINGS

This bill requires public bodies to allow for remote recording of public meetings on the same platform that is used to conduct the meeting as long as additional costs are not incurred by the public body.

This bill was enacted as PL 2023, c. 185, and will be effective 90 days after adjournment. A copy of the enacted law is included with this memo.

L.D. 1499 - EARLY RETIREMENT REDUCTION

This bill requires a recalculation of retirement benefits based on a decreased early retirement reduction for certain state employee and teacher retirees. *It is our understanding that the budget bill (L.D. 258) includes the language and funding to address the issue raised in L.D. 1499.*

L.D. 1562- FIDUCIARY RESPONSIBILITY STANDARDS

This bill would establish certain standards of care for fiduciaries of the Maine Public Employees Retirement System. A public hearing was held on April 20, 2023. A work session was held on April 20, 2023, at which the bill was unanimously **voted ought not to pass** at the sponsor's request.

L.D. 1607-STABILIZE PENSION FUNDS

This bill would establish the Retirement Improvement Fund and requires that a portion of any surplus General Fund revenue be transferred to the fund to pay for retirement benefit improvements. A public hearing was held on April 24. *A work session was held on June 13, at which the bill was unanimously **voted ought not to pass.***

L.D. 1759- DISABILITY PROGRAM

This bill makes several changes to the disability retirement program. A public hearing was held on May 3. A work session was held on May 16, at which the bill was unanimously **voted ought not to pass.**

L.D. 1760- EXPAND 1998 SPECIAL PLAN- CRISIS WORKERS

This bill would allow certain employees in the Department of Health and Human Services who are currently included in the regular plan to be covered instead by the 1998 Special Plan. The bill was amended to remove a member election that is not permissible under federal law. *The bill was enacted by the House and **placed on the Special Appropriations Table.***

L.D. 1761- EXPAND 1998 SPECIAL PLAN- MENTAL HEALTH WORKERS

This bill would allow certain employees in the Department of Health and Human Services who are currently included in the regular plan to be covered instead by the 1998 Special Plan. The bill was amended to remove a member election that is not permissible under federal law. *The bill was enacted by the House and **placed on the Special Appropriations Table.***

REPORTS

The following reports have been or will be prepared for the Legislature during the upcoming weeks:

BOARD AND PLO ADVISORY COMMITTEE ACTIVITY

The System is required to report annually to the Secretary of State on activities of the Board of Trustees and the PLO Advisory Committee. These reports were submitted on December 20, 2022, and copies were previously provided to the Board.

ESG POLICY

The System is required to report information annually to the Legislature regarding its environmental, social and governance investment policy. This report must disclose commonly available environmental performance metrics on the environmental effects of the board's investment. This report was filed on December 15, 2022, and a copy was previously provided to the Board.

DIVESTMENT

The System is required to report information to the Legislature regarding the progress of divestment from fossil fuels and the implementation of the divestment law enacted in 2021 (PL c. 231). This report must be submitted annually by January 1, 2023, 2024 and 2025. We requested an extension for the filing of this report until January 17, 2023 in order for the Board to have an opportunity to review the final report before it was submitted. The report was submitted on January 17, and a copy was previously provided to the Board.

LONG-TERM DISABILITY INSURANCE

The System is required to submit a report to the Legislature regarding an implementation plan for mandatory long-term disability insurance. This report was filed on December 20, 2022, and a copy was previously provided to the Board.

DISABILITY RETIREMENT

The System is required to submit a report to the Legislature regarding the experience of the system and its members after the implementation of the new disability program provisions. This report was filed on January 31, 2023, and a copy was previously provided to the Board.

PROCUREMENT

The System is required to report information annually to the Legislature regarding procurement, contributions, and changes to certain policies and procedures. This report was filed on January 23, and a copy was previously provided to the Board.

MILITARY SUBSIDY REPORT

The System is required to report information annually to the Legislature regarding military service credit purchase requests received from certain categories of members. This report was filed on February 7, and a copy was previously provided to the Board.

ANNUAL REPORT TO THE LEGISLATURE

The System is required to submit an annual report to the Legislature, including specific information set out in statute. This report was filed on February 27, and a copy was previously provided to the Board.

PRESENTATIONS

The System presented an orientation briefing to the Committee on Appropriations and Financial Affairs (AFA) on January 30, and to the Committee on Labor and Housing (LBHS) on January 31. Both presentations were well received.

The System presented the Disability Program Experience Report to the LBHS Committee on February 2. The presentation was well received.

APPROVED
JUNE 16, 2023
BY GOVERNOR

CHAPTER
208
PUBLIC LAW

STATE OF MAINE

—
IN THE YEAR OF OUR LORD
TWO THOUSAND TWENTY-THREE

—
H.P. 74 - L.D. 106

**An Act to Allow Members of the Maine Public Employees Retirement System
With Service in Multiple Plans to Defer Retirement Service Benefits Until
Normal Retirement Age to Avoid a Reduction in Benefits**

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 5 MRSA §17851, sub-§17 is enacted to read:

17. Member eligible to retire from plans with different normal retirement ages.
A member who meets eligibility requirements to retire from plans with different normal retirement ages may retire and, at the election of the member, defer initiation of service retirement benefits from any plan in which the benefits would be reduced because the member has not reached normal retirement age. The deferral ends when the member reaches normal retirement age for the plan. The election to defer is irrevocable and must be made before payment of a service retirement benefit begins. Service retirement benefits deferred under this subsection must be paid by the retirement system without an early retirement reduction and without any retroactive payment for the deferral period. If the member dies before the end of the deferral period, the deferral of benefits apply to any continuing beneficiary payments for the same deferral period that would have been applicable to the member.

APPROVED
 JUNE 22, 2023
 BY GOVERNOR

CHAPTER
 246
 PUBLIC LAW

STATE OF MAINE

—
 IN THE YEAR OF OUR LORD
 TWO THOUSAND TWENTY-THREE

—
 S.P. 134 - L.D. 313

An Act to Allow Game Wardens to Transfer Retirement Service, Allow Certain Employees of Participating Local Districts to Purchase Service Credit and Allow Transfer of Membership from the State Employee Retirement Plan to Another Plan

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 5 MRSA §17656, sub-§1, as amended by PL 2007, c. 542, §§1 and 2, is further amended to read:

1. Reemployment with new employer. Membership of a member who is reemployed with a new employer, or who transfers from one state employee plan to another state employee plan, is governed as follows:

A. Any member of the State Employee and Teacher Retirement Program or the Participating Local District Retirement Program whose service is terminated as a state employee, teacher or participating local district employee and who becomes employed as a state employee, teacher or participating local district employee with a new employer or who transfers from one state employee plan to another state employee plan shall, if the member has not previously withdrawn the member's accumulated contributions:

- (1) Have the membership transferred to the member's account with the new employer or new plan; and
- (2) Be entitled to all benefits that:
 - (a) Are based on creditable service and earnable compensation with the previous employer or previous plan and the provisions of this Part in effect with respect to the previous employer or previous plan at the date of termination of service by the member; and
 - (b) Do not require additional contributions by the new employer.

B. The new employer or new plan may elect to include the creditable service and earnable compensation of the member with the previous employer with the creditable service and earnable compensation with the new employer. If that election is made, the

new employer shall make, from time to time, whatever contributions are necessary to provide the benefits under the applicable retirement program for the member as have accrued to the member by reason of the member's previous employment and as may accrue to the member by reason of the member's new employment.

C. If the new employer makes the election provided under paragraph B, or the member makes the election provided under paragraph D, all funds in the applicable retirement program contributed by the member's former employer or under the previous plan on account of the member's previous employment must be transferred to the account of the new employer or new plan and must be used to liquidate the liability incurred by reason of the previous employment.

D. Notwithstanding paragraph A, a member of the Maine Public Employees Retirement System who is a game warden, a law enforcement officer as defined in Title 25, section 2801-A, subsection 5, or a state firefighter, whose previous membership was based upon employment as a municipal firefighter as defined in section 286-M, a game warden, a law enforcement officer or a state firefighter, or their employer, may elect to make the contribution necessary to include all or part of the member's creditable service and earnable compensation from the prior plan in the new plan, including a transfer from one state employee plan to a different state employee plan. For members moving from one state employee plan to another state employee plan, no separation of service or reemployment is necessary. The retirement system shall establish procedures for determining the contribution necessary for such a member to carry forward all or part of the creditable service and earnable compensation from a prior plan or plans. For purposes of this paragraph, "state firefighter" means a person employed by the State with the primary responsibility of aiding in the extinguishment of fires and includes a member of emergency medical services line personnel as defined in section 286-M, subsection 2, paragraph H. For purposes of this paragraph, "game warden" means a person appointed by the Commissioner of Inland Fisheries and Wildlife pursuant to Title 12, section 10351, subsection 1.

Sec. 2. Former participating local district employee may purchase service credit. A former employee of a local district who was not permitted to become a member of the Participating Local District Retirement Program when the local district resumed participation in the program under the Maine Revised Statutes, Title 5, section 18254-A because the former employee previously elected not to maintain membership when the local district withdrew from participation and who has become a member as an employee of another local district may purchase the service credit under Title 5, section 18252-A, subsection 1, paragraph E and Title 5, section 18254, subsection 1 if the employee is still employed by the local district. The purchase of service credit under this section must be completed by December 31, 2023.

APPROVED
JUNE 1, 2023
BY GOVERNOR

CHAPTER
23
RESOLVES

STATE OF MAINE

—
IN THE YEAR OF OUR LORD
TWO THOUSAND TWENTY-THREE

—
H.P. 778 - L.D. 1230

**Resolve, Directing the Maine Public Employees Retirement System to Study
the Creation of an Interstate Compact Concerning the Windfall Elimination
Provision and Government Pension Offset**

Sec. 1. Maine Public Employees Retirement System to study interstate compact. Resolved: That the Maine Public Employees Retirement System shall study the creation and adoption of an interstate compact with other states affected by the government pension offset, pursuant to the federal Social Security Amendments of 1977, Public Law 95-216, and the windfall elimination provision, pursuant to the federal Social Security Amendments of 1983, Public Law 98-21. The Maine Public Employees Retirement System shall consult and collaborate with any applicable retirement associations, such as the National Association of State Retirement Administrators, as necessary. The Maine Public Employees Retirement System shall submit a report with its recommendations, including any suggested legislation, no later than December 6, 2023 to the Joint Standing Committee on Labor and Housing. The committee may report out a bill based upon the report and recommendations to the Second Regular Session of the 131st Legislature.

APPROVED
 JUNE 15, 2023
 BY GOVERNOR

CHAPTER
 185
 PUBLIC LAW

STATE OF MAINE

—
 IN THE YEAR OF OUR LORD
 TWO THOUSAND TWENTY-THREE

—
 H.P. 921 - L.D. 1425

An Act to Strengthen Freedom of Access Protections by Allowing Remote Meetings to Be Recorded

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 1 MRSA §403-B, sub-§2, ¶G, as enacted by PL 2021, c. 290, §1, is amended to read:

G. All votes taken during a public proceeding using remote methods must be taken by roll call vote that can be seen and heard if using video technology, and heard if using only audio technology, by the other members of the public body and the public; ~~and~~

Sec. 2. 1 MRSA §403-B, sub-§2, ¶H, as amended by PL 2021, c. 611, §2, is further amended to read:

H. The public body must make all documents and other materials considered by the public body available, electronically or otherwise, to the public who attend by remote methods to the same extent customarily available to members of the public who attend the proceedings of the public body in person, as long as additional costs are not incurred by the public body. The public body must make the proposed policy regarding remote participation available in advance of the meeting if meeting remotely under paragraph A, subparagraphs (1) and (2); ~~and~~

Sec. 3. 1 MRSA §403-B, sub-§2, ¶I is enacted to read:

I. When the public may attend a public proceeding by remote methods, the public body must allow members of the public to record the proceeding remotely using the same electronic platform that is used to conduct the proceeding remotely as long as the electronic platform allows participants other than the host to record the proceeding remotely, additional costs are not incurred by the public body and the recording of the proceeding does not interfere with the orderly conduct of the proceeding.

MAINEPERS

BOARD OF TRUSTEES MEMORANDUM

TO: BOARD MEMBERS

FROM: MICHAEL J. COLLERAN, CHIEF OPERATING OFFICER & GENERAL COUNSEL
CHIP GAVIN, CHIEF SERVICES OFFICER
SHERRY VANDRELL, CHIEF FINANCIAL OFFICER

SUBJECT: MEMBER SERVICES, FINANCE, AND OPERATIONS REPORT

DATE: JULY 5, 2023

Content in the following paragraphs was selected to provide noteworthy information regarding the System's member services, finance, and operations.

POLICY REFERENCE

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communications and Support to the Board](#)

MEMBER SERVICES

1. CUSTOMARY SERVICES DATA: The customary data about routine member services are attached to this report.
2. SUMMER SURGE: At the time of this report's preparation, MainePERS was readying to address the anticipated summer surge of retirements driven by cyclical teacher plan member resignations following the end of the school year. At the time of this report, MainePERS expected a surge of approximately 500 retirees for July payroll, the majority of whom are teacher plan members.
3. MEMBER PORTAL: The member portal continues to advance through various testing phases and remains on track for launch in fall 2023. Phase 3 testing has been completed. Phase 4 testing, which will for the first time involve members and retirees who are not MainePERS staff, is being scheduled for July. This effort is part of Goal IV, Strategic Objective (E) and other related components of the Strategic Plan.
4. PENSION ADMINISTRATION SOFTWARE: MainePERS has contracted with Linea, who emerged as the top-rated vendor in a recent competitive solicitation process for advisory services related to refreshing or replacing MainePERS current core pension administration software. In collaboration with Linea, MainePERS will now undertake the work of crafting a request for proposals for the actual software solution – including cloud based solutions – and ultimately conducting that solution solicitation. The project involves the full spectrum of MainePERS

work units. This effort is part of Goal III, Strategic Objective (B) and other related components of the Strategic Plan.

5. GROUP LIFE INSURANCE CALCULATOR: The functionality of the GLI premium calculator was recently updated. The new version of the calculator allows the user to see a breakdown of the premiums being charged, providing individual premium costs for basic, supplemental and dependent coverage, as well as the total cost for the coverage(s) an employee selects. The prior version of the calculator only provided the total premium due for all coverages selected. These improvements will allow employers to more efficiently administer their payroll as well as assist staff in invoice reconciliation efforts. This [online calculator](#) effort is part of Goal IV, Strategic Objective (A); Goal V, Strategic Objective (D) and other related components of the Strategic Plan.

The screenshot shows the MainePERS website's Group Life Insurance Premium Calculator. The page has a teal header with the MainePERS logo and navigation links: HOME, INVESTMENTS, LAWS & RULES, REPORTS, FORMS & RESOURCES, EMPLOYERS, ABOUT, CONTACT. Below the header is a navigation menu with buttons for 'Before You Join', 'While Working', 'Retirement', and a search bar. The main content area is titled 'Group Life Insurance Premium Calculator' and includes a sidebar with 'Employers' links. The calculator form has the following fields:

- Employer Type*: **PLD**
- Premium Frequency: **Monthly**
- Age Range: **0 - 34**
- Supplemental Coverage Options 0-34: **Basic Only**
- Dependent Coverage: **None**
- Enter Annual Compensation*: [Empty text box]

Summary

- Employer Type: PLD
- Basic: \$0.00
- Supplemental Coverage: \$0.00
- Dependent Flat Rate: 0

Premium

\$0.00

This group life premiums calculator may be used in place of the premium charts found elsewhere on the web site and reflects the rates in effect as of July 1, 2023 for State and Participating Local District Plans. The July 1, 2017 rates are shown in red.

6. FOCUS FRIDAYS: The special effort to tackle backlogs of various pending member requests continues to have an impact in reducing pending queues of work and improving the timeliness of service delivery. MainePERS anticipates the August meeting will include an update regarding whether to continue this special Focus Friday practice for an additional period of time. While substantial progress has been made to reduce backlogs in many areas, significant backlogs, such as calculating final benefits and service credit purchase requests, remain unresolved at this time. This effort is part of Goal IV, Strategic Objective (B) and other related components of the Strategic Plan.

FINANCE

1. EMPLOYER REPORTING. Employers submitted defined benefit payrolls on time at a 96.5% rate in June, bringing the fiscal year to date monthly average to 90.4%. This compares to a rate of 92% in May of last year. In addition to maintaining fully reconciled accounts to keep them current, the Employer Reporting unit reconciled an additional 19 employer accounts this past month, bringing the total number of fully-reconciled accounts to 466, an increase of 4.3% over last month's report.
2. EMPLOYER AUDITING. Three audits were opened in June and four were completed. None of the completed audits revealed contribution errors. Ninety-four percent of all findings to date have been resolved satisfactorily, which is the same rate reported last month.

OPERATIONS

1. COLLECTIVE BARGAINING: MSEA and our bargaining unit staff have ratified the wage-reopener agreements approved by the Board last month. Compensation increases for bargaining unit members went into effect July 1. Reallocation of certain bargaining unit positions into higher ranges based on the Korn Ferry compensation study went into effect the same date.
2. HUMAN RESOURCES: We had no employees terminate in June, the first time that has happened in nine months. Turnover for CY 2023 is down approximately 30% from CY 2022 but remains well above historic rates. Three staff members are participating in a Diversity and Inclusion in HR Management certification program.
3. FACILITIES: Our new Facilities Manager, Jay Dunn, joined us on June 20, 2023, which allowed for a two-week turnover before his predecessor's departure. Jay has experience with MainePERS, having participated in the build-out of our Augusta facility.
4. WIRELESS UPGRADES IN AUGUSTA AND PORTLAND: We recently completed an upgrade of the wireless infrastructure in Augusta and Portland. This project increased wireless coverage in both locations and boosted signal strength.

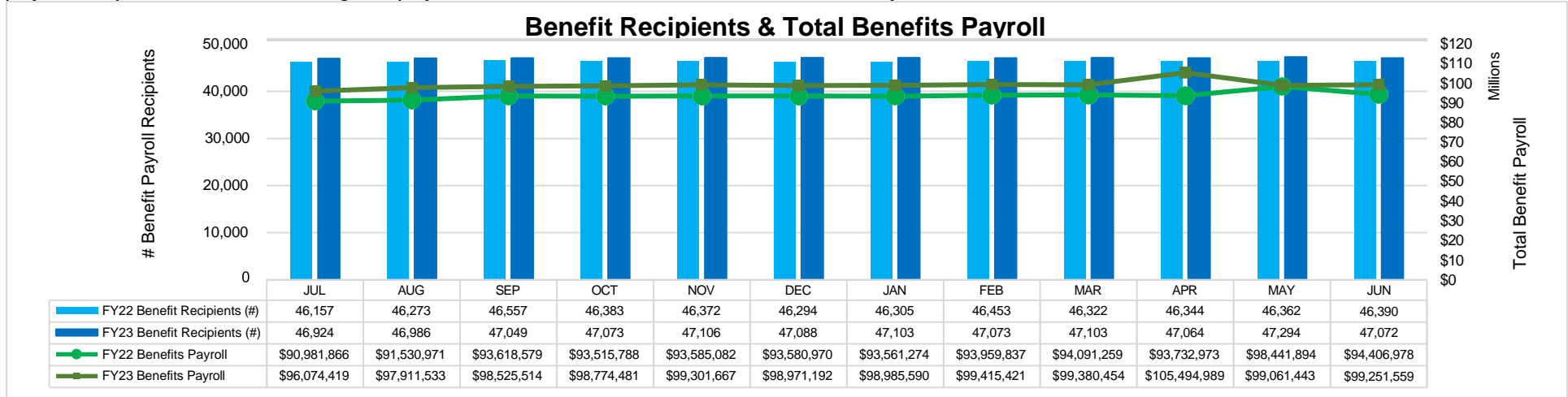
RECOMMENDATION

No Board action is recommended at this time.

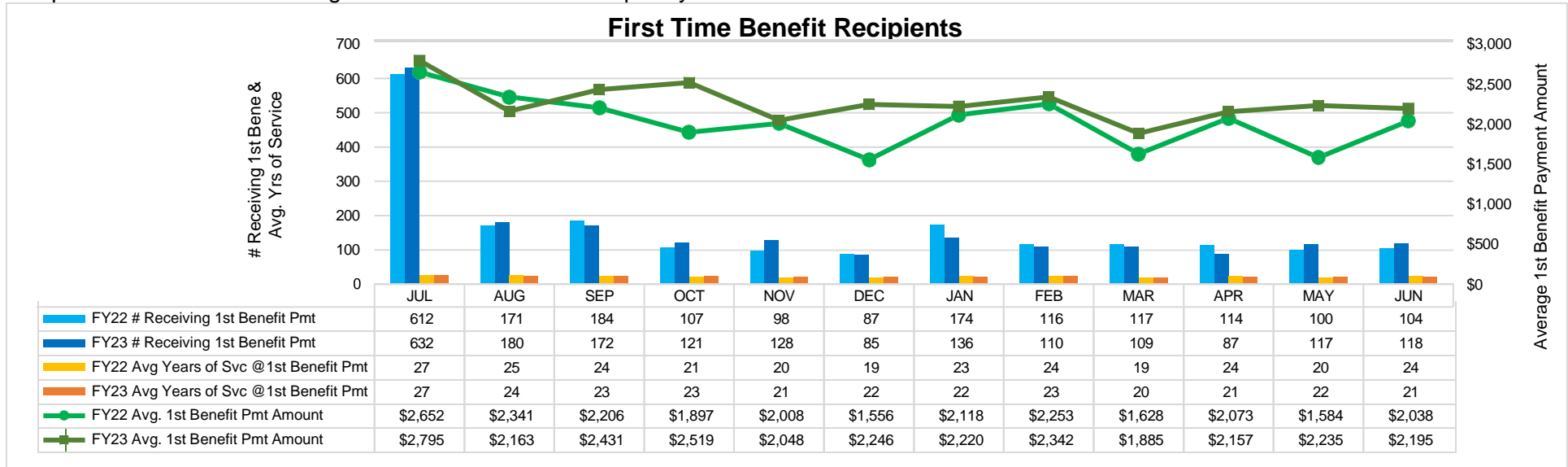
JULY 2023 BOARD OF TRUSTEES OPERATIONS – MEMBER SERVICES SUPPLEMENTAL NUMBERS

RETIREMENT SERVICES

BENEFITS PAYROLL. Regular monthly pension benefit payments were made to 47,072 recipients in June, totaling \$99,251,559. *Note: Special payments paid outside of the regular payroll run are not reflected in the “Benefits Payroll” total.*



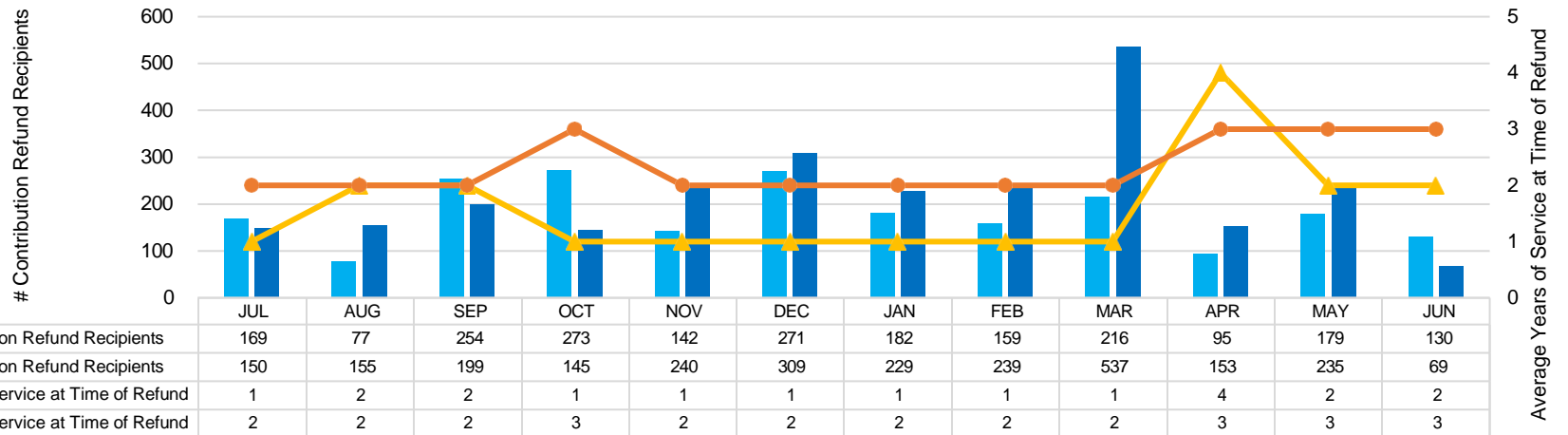
FIRST TIME BENEFIT RECIPIENTS. One-hundred-eighteen (118) individuals received their first benefit payment in June. The average benefit amount was \$2,195. First time recipients averaged twenty-one (21) years of service. The count of new recipients, payment amount, and service are comparable to data seen during the same month in recent prior years.



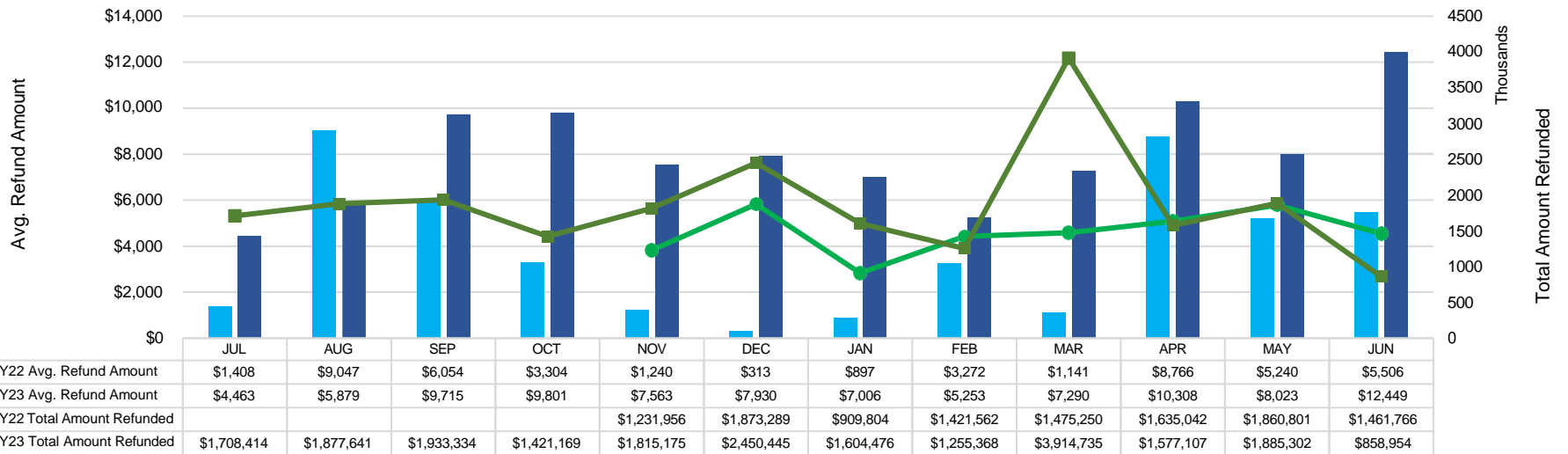
RETIREMENT SERVICES: Continued

CONTRIBUTION REFUNDS: Sixty-nine (69) former members received a refund of their contributions in June. The average refund was \$12,449 as the result of an average three (3) years of service. The aggregate amount refunded was \$858,954.

Contribution Refunds Issued: Total Number & Avg. Yrs of Service

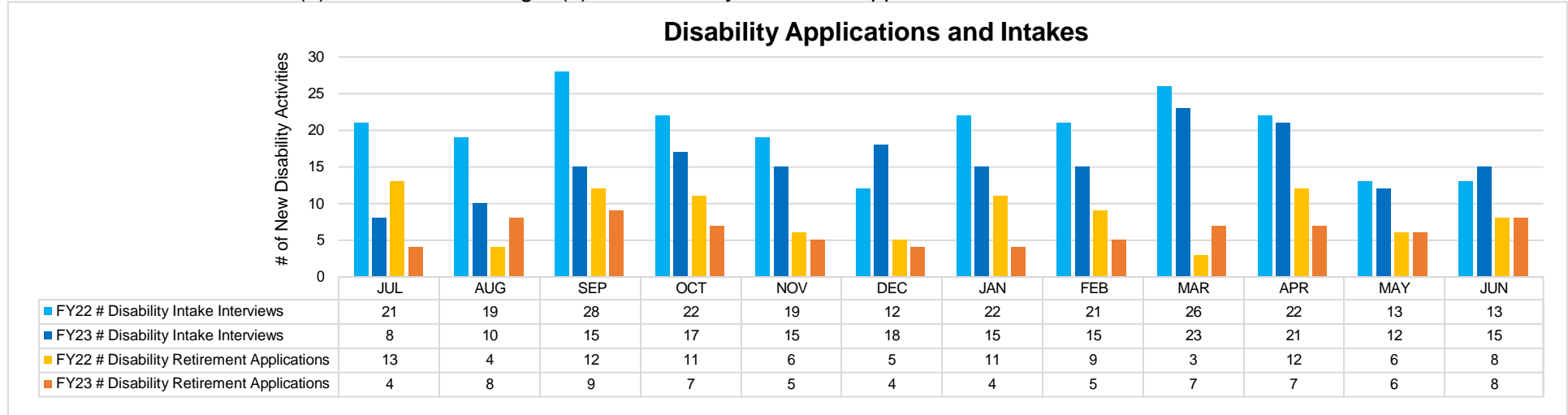


Contribution Refund Average Amount and Total Amount Refunded



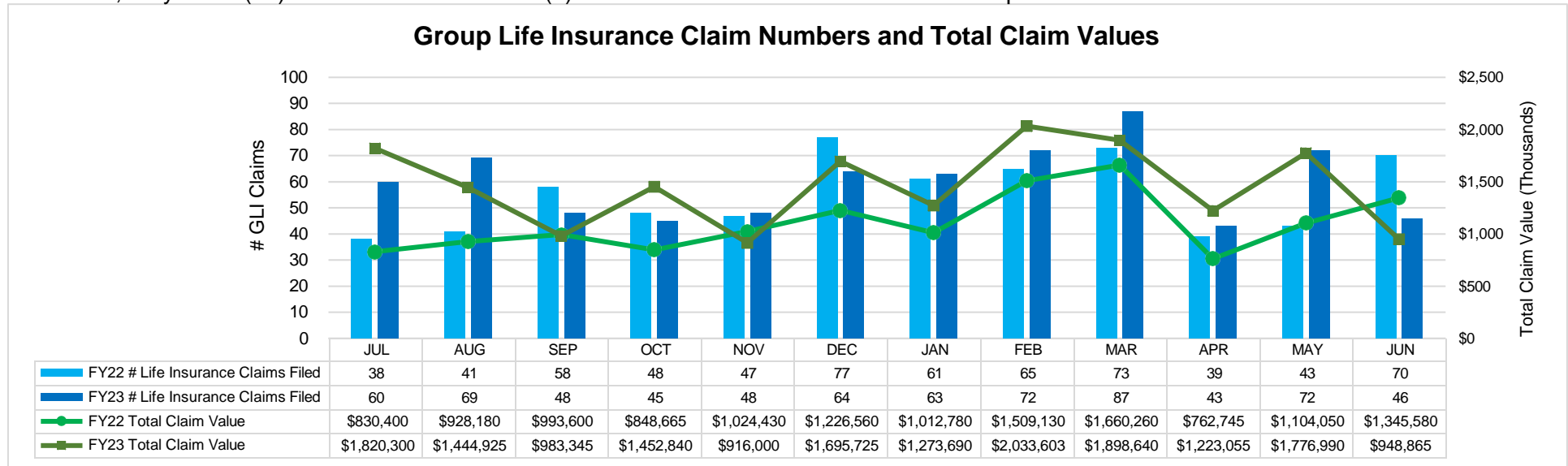
DISABILITY SERVICES

Fifteen (15) intake interviews were completed in June with varying levels of detail and duration. Intakes included six (6) State members, seven (7) Teacher members and two (2) PLD members. Eight (8) new disability retirement applications were received in June.



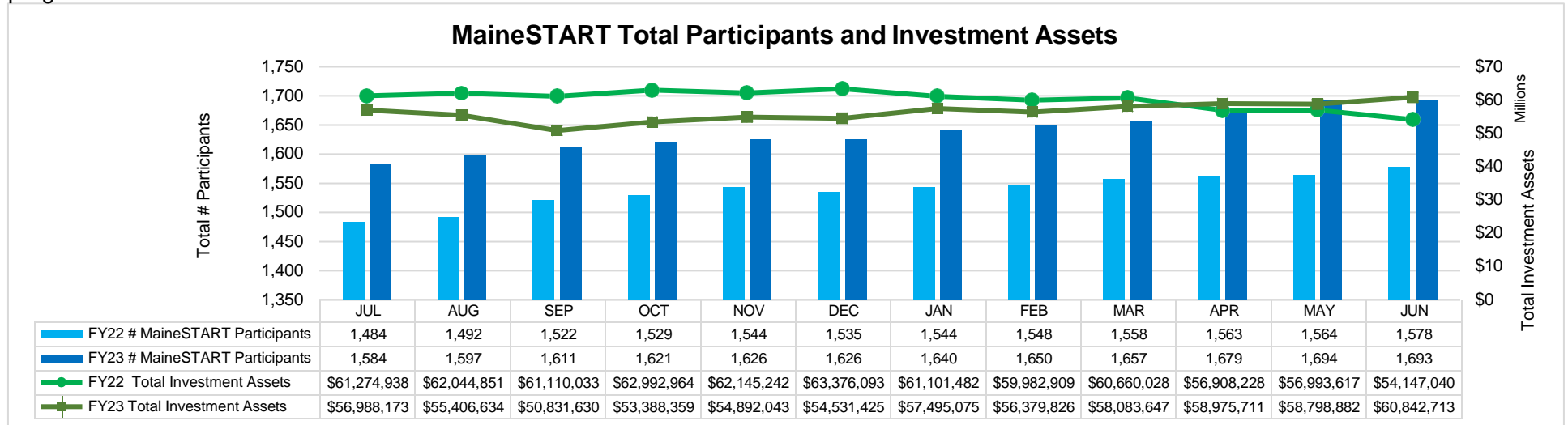
SURVIVOR SERVICES

Forty-six (46) life insurance claims were sent to our carrier (The Hartford) in June with a total value of \$948,865 in payments due to beneficiaries. Of the claims, forty-three (43) were retirees and three (3) were active members. There were no dependent claims in June.



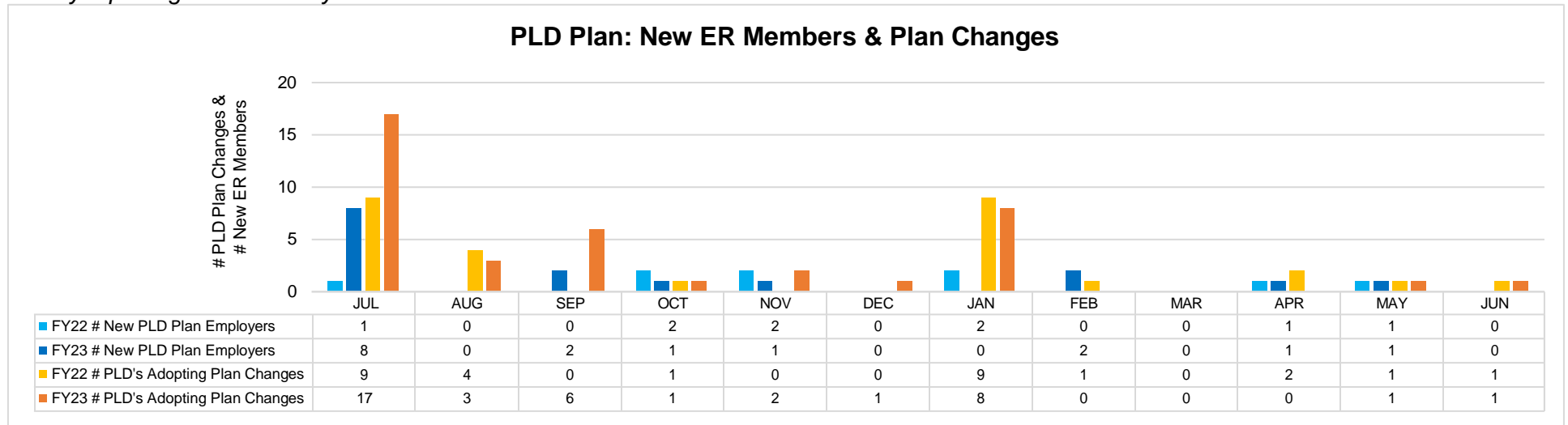
DEFINED CONTRIBUTION PLAN SERVICES

MaineSTART had one thousand six hundred ninety-three (1,693) participants at the end of June, with \$60,842,715 of investment assets in the program.



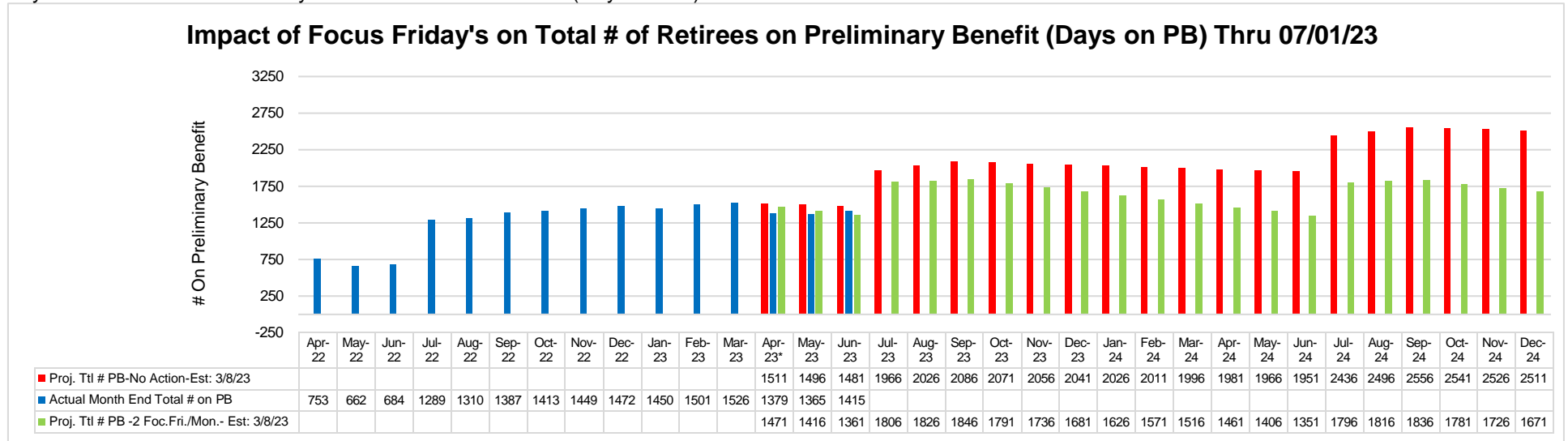
PLD PLAN ADMINISTRATION

No new employers joined the PLD Retirement Program effective June 01, 2023. There was one (1) employer plan change effective in June 01, 2023; Town of Wilton adopted the Limited Period Open Enrollment Provision retroactive to July 1, 2022. *This format is consistent with MainePERS activity reporting to our actuary.*



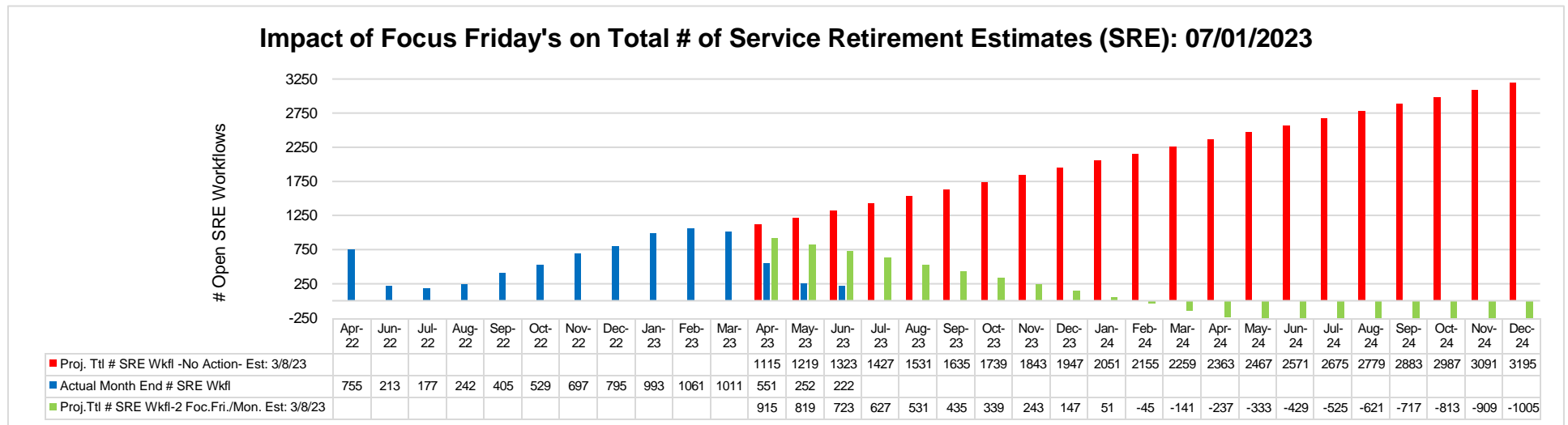
FOCUS FRIDAY IMPACT ON BACKLOG REDUCTION

Preliminary to Final Benefit (PB to Final) Backlog thru 07/01/23: The backlog projections and reporting below are based on a data point that counts days since an initial Preliminary Benefit disbursement date (Days on PB) occurred.



Service Retirement Estimate Backlog BACKLOG THRU 07/01/23

SERVICE RETIREMENT BACKLOG THRU 07/01/23: The backlog projections and reporting below are based on data that count the total number of open Service Retirement workflows. The backlog has been significantly reduced from the Feb-23 high.



MAINEPERS

BOARD OF TRUSTEES MEMORANDUM

TO: BOARD MEMBERS
FROM: MICHAEL COLLERAN, CHIEF OPERATING OFFICER & GENERAL COUNSEL
SUBJECT: PORTING OF PRIOR SERVICE
DATE: JULY 5, 2023

The Board in November of 1998 accepted the proposal of the Executive Director to give confidential employees the opportunity to port prior service in the State-Teacher plan into the PLD Consolidated Plan. The minutes of that meeting explain that the Board accepted the proposal because of its “potential to improve the System’s ability to attract and retain highly experienced employees with highly relevant experience, particularly at senior levels.” When service is ported, the System pays into the PLD Consolidated Plan an amount to cover any increase in liability to the Plan that is not covered by assets transferred from the State-Teacher Plan. The cost varies depending on differences between the two plans and the employee’s history and demographics. Since the Board action in 1998, MainePERS has consistently ported over prior service for confidential employees. We recommend continuing this practice with reasonable constraints and Board approval for higher-cost porting.

POLICY REFERENCE

[Board Policy 4.5 – Board/Staff Relations](#)

[Board Policy 4.6 – Communication and Support to the Board](#)

[Board Policy 5.8 – Compensation and Benefits](#)

RECOMMENDATION

That the Board confirm that it has delegated to the Chief Executive Officer the determination of compensation and benefits for confidential employees, including porting of credible service in a MainePERS-covered plan at a cost not to exceed \$75,000, subject to reasonable constraints to be determined by the Chief Executive Officer; and that the Board has retained authority and discretion to determine the Chief Executive Officer’s compensation and benefits, including the porting of any creditable service in a MainePERS-covered plan.