# GRAFTECH INTERNATIONAL HOLDINGS INC. SAVINGS PLAN Plan Number 091663 Plan Information as of – 06/24/2023

This legally required notice includes important information about the investment options under your retirement plan. You can also review additional information about your investment options, on your plan's website at http://retirementplans.vanguard.com/PubFundChart/graftech/7190, or by contacting Vanguard Participant Services at 800-523-1188 or via TTY text telephone for the deaf or hearing impaired at 800-749-7273. You can obtain a free paper copy of the information on the website by calling Vanguard at 800-523-1188. No specific action is required on your part as a result of this notice.

It takes just a few minutes to sign up for e-delivery: If you haven't already signed up to receive plan communications electronically, you can change your mailing preference by logging on to vanguard.com/retirementplans.

# Summary

This document has two parts. Part I consists of general plan information, including how you may direct investments in your plan account, whether you have voting rights associated with any plan investments and any restrictions that may apply to that investment direction. Part I also describes the fees and expenses you will pay for plan administration and individual transactions. Part II consists of performance information for plan investment options. This part shows you how well the investments have performed in the past. Part II also shows you the fees and expenses you will pay for each investment option.

#### Part I. General plan information

# A. How to direct your plan investments

Your plan gives you the right to direct some or all of your plan investments. You can direct your plan investments using any of the three convenient methods listed below. For a list of the designated investment alternatives offered in your plan and any designated investment managers, please refer to the complete investment fee and performance chart contained in this notice.

- Online. Log on to your account at vanguard.com anytime. If you have not signed up for secure online account access, visit vanguard.com/register and follow the prompts. You will need your plan number: 091663.
- By phone. Call the 24-hour interactive VOICE<sup>®</sup> Network at 800-523-1188. You will need a personal identification number (PIN) to use VOICE. To create a PIN, follow the prompts.
- With personal assistance. Vanguard Participant Services associates are available at 800-523-1188 or via TTY text telephone for the deaf or hearing impaired at 800-749-7273 Monday through Friday from 8:30 a.m. to 9 p.m., Eastern Time.

Transaction requests (for example, a contribution, exchange or redemption) must be in good order. "Good order" means that Vanguard has determined that (1) your transaction request includes complete information and (2) appropriate assets are already in your account or new assets have been received.

Vanguard, as your plan's record keeper, will determine the necessary processing time for your transaction request before submission to the fund(s).

Your transaction will then be based on the next-determined net asset value (NAV) of the investment's shares. If your transaction request is received by Vanguard in good order on a business day before the close of regular trading on the New York Stock Exchange (NYSE) (generally 4 p.m., Eastern Time), you will receive that day's NAV and trade date. If your transaction request is received in good order while the NYSE is closed, you will receive the next business day's NAV and trade date.

If your transaction involves one or more investments with an early cutoff time for processing or another trading restriction, your entire transaction will be subject to that cutoff time when the trade date for your transaction is determined. If an early cutoff time applies to an investment available in your plan, please review the next section for additional information.

Also, please note some investments may restrict investments of new money. If this applies to a transaction you request, you may be requested to contact Vanguard before the transaction may be processed.

You may not cancel any transaction request once processing has begun. Please be careful when placing a transaction request.

# Proxy voting

The plan administrator or other named fiduciary for the plan exercises voting, tender and similar rights with respect to the mutual funds in the plan.

# B. Limitations on your ability to direct investments

# Frequent trading policy

Because excessive transactions can disrupt the management of an investment and increase its transaction costs, limits are placed on exchanges and other transactions. If you move money out of an investment (other than money market funds, stable value investments, employer securities, short-term bond funds, but including Short-Term Inflation-Protected Securities Index), you cannot move money back into the same investment for 30 days. This policy applies regardless of the dollar amount. Please note that the 30-day clock restarts after every exchange out of the investment.

The frequent trading policy does not apply to the following: exchange requests submitted by mail to Vanguard (exchange requests submitted by fax, if otherwise permitted, are not mail requests and are subject to the policy); exchanges of shares purchased with participant payroll or employer contributions or loan payments; exchanges of shares purchased with reinvested dividend or capital gains distributions; distributions, loans, and in-service withdrawals from a plan; redemptions of shares as part of a plan termination or at the direction of the plan; redemptions of shares to pay fund or account fees; share or asset transfers or rollovers; re-registrations of shares within the same investment; conversions of shares from one share class to another in the same investment; and automated transactions executed through any Advice Program.

Note that your plan and the issuers of your plan's investments reserve the right to revise or terminate the exchange privilege (your ability to move money between investments), limit the amount of any exchange, or reject any exchange at any time, without notice.

# C. Plan administrative expenses

The following fees will be charged to your plan account for administration of the plan, to the extent the plan is charged these fees. Please also review your account statement for disclosure of the dollar amount actually charged to your account for these services, and a description of the services to which these fees relate.

An annual plan recordkeeping fee of \$92 is charged to each plan participant. This fee is automatically deducted from your account balance periodically.

# D. Individual transaction expenses

Your account will be subject to additional fees if you select one of the following plan services. Please also review your account statement for a detailed disclosure of the dollar amount actually charged to your account for these services and a description of the services to which these fees relate.

#### Loan origination fee

An origination fee will be deducted from the loan proceeds for each loan issued from your account. The fee is \$40 if you request the loan through **vanguard.com** or VOICE®, and \$90 if you request the loan with personal assistance from a Vanguard associate.

#### Loan maintenance fee

An annual maintenance fee of \$25 will be deducted from your account balance for each loan in your account. The annual loan maintenance fee is charged usually in mid-July in the calendar year after the loan was issued.

### Hardship withdrawal fee

If you request a hardship withdrawal from your account, a fee of \$150 will be deducted from your account balance for each hardship withdrawal that is processed.

#### In-Service Withdrawal fee

If you request a withdrawal from your account, a fee of \$50 will be deducted from your account balance for each separate withdrawal that is processed.

# Required Minimum Distribution and Installment fee

An annual fee of \$50 will be deducted from your account balance on your first required minimum distribution or installment that is processed in a calendar year.

#### Termination withdrawal fee

If your account balance is above \$100 you will be charged a fee of \$50 when you remove money from your account after termination of employment. This fee will be deducted from your withdrawal amount.

#### Digital Advisor fee

Vanguard Digital Advisor is an advisory service offered through Vanguard Advisers, Inc. In providing this service, Vanguard Advisers, Inc. is a designated investment manager for your plan.

The service provides enrolled participants with automated investment advisory and financial planning services. If you enroll in Vanguard Digital Advisor, you will be charged an annual gross advisory fee of 0.21% based on your average daily balance of investments held in your account.

To avoid conflicts of interest for any revenues that Vanguard receives on assets in enrolled accounts (for example, revenues from Vanguard Funds), Digital Advisor will reduce your gross advisory fee by the amount of revenue that Vanguard (or a Vanguard affiliate) receives on your enrolled account to calculate the net advisory fee. The net advisory fee is the amount ultimately collected from your account and is shown on your quarterly statement.

Digital Advisor net advisory fee is approximately 0.15% across your Portfolio for a typical investment portfolio, although actual expenses will vary based on the specific holdings in each enrolled account or reasonable restrictions elected in such accounts. Your net advisory fee can also vary by enrolled account type. If you enroll multiple accounts in Digital Advisor, the net advisory fee you pay may vary by enrolled account.

# Personal Advisor fee

Vanguard Personal Advisor provides an investment advisory management service offered through Vanguard Advisers, Inc. In providing this service, Vanguard Advisers, Inc. is a discretionary and designated investment manager for your plan.

The service provides enrolled participants with automated investment advisory and financial planning services. If you enroll in Vanguard Personal Advisor, you will be charged an annual gross advisory fee of 0.36% based on your average daily balance of investments held in your account.

To avoid conflicts of interest for any revenues that Vanguard receives on assets in enrolled accounts (for example, revenues from Vanguard Funds), Personal Advisor will reduce your gross advisory fee by the amount of revenue that Vanguard (or a Vanguard affiliate) receives on your enrolled account to calculate the net advisory fee. The net advisory fee is the amount ultimately collected from your account and is

shown on your quarterly statement.

Personal Advisor's net advisory fee is approximately 0.30% across your Portfolio for a typical investment portfolio although actual expenses will vary based on the specific holdings in each enrolled account or reasonable restrictions elected in such accounts. Your net advisory fee can also vary by enrolled account type. If you enroll multiple accounts in Personal Advisor, the net advisory fee you pay may vary by enrolled account.

# Vanguard Situational Advisor fee

Vanguard Situational Advisor is an advisory service offered through Vanguard Advisors, Inc. The service provides participants with a point-in-time financial wellness evaluation with a Vanguard Advisor which may include: nondiscretionary investment strategies for their retirement accounts based on personalized financial plans created by VAI, advice and guidance in navigating life events while planning for and achieving retirement success, and/or addressing specific investment-related questions or topics.

Vanguard Situational Advisor charges a per-use fee of \$250, which, unless otherwise paid for by your employer, is assessed from the participant's employer-sponsored plan balance.

# Qualified domestic relations order (QDRO) fee

A Qualified Domestic Relations Order (QDRO) is a legal document ordering the division of a retirement plan account between parties in a divorce. If you or your spouse submits a QDRO to be processed for your account, the following fees will be assessed:

• QDRO determination fee: \$800.

#### Investment fees charged to your account

Investments in your plan may carry additional fees, including administrative charges, commissions, sales loads, sales charges, deferred sales charges, redemption fees, surrender charges, exchange fees, account fees, and purchase fees. Please review the complete investment fee and performance chart contained in this notice to determine whether these fees may be charged for an investment option, and review your account statement for a detailed disclosure of the dollar amount actually charged to your account each quarter that is attributable to these fees.

#### Part II. Investment performance and fee information

The table below focuses on the performance of investment options that do not have a fixed or stated rate of return. This table shows how these options have performed over time and allows you to compare them with an associated benchmark for the same time periods. Past performance does not guarantee how the investment option will perform in the future. Your investment in these options could lose money. Information about an option's principal risks is available on your plan's website.

This table also shows fee and expense information for the investment options listed below, including the total annual operating expenses of each investment option listed below. Total annual operating expenses are expenses that reduce the rate of return of the investment option. This table also shows shareholder-type fees. These fees are in addition to total annual operating expenses. In addition to restrictions or limitations described elsewhere in this notice, the table shows any restrictions or limitations that may apply to purchases, transfers, or withdrawals of the investment.

Please note, each benchmark provided in the chart is a broad-based securities market index, as required by Department of Labor regulation. When reviewing performance of a blended fund (a fund that invests in a mix of stocks, bonds and/or money market instruments, like a Target Date Fund or balanced fund), it may also be useful to compare fund returns to composite benchmarks comprised of multiple broad-based indices based on the fund's composition, goals and objectives. Composite benchmarks are available in the fund prospectuses and at vanguard.com. If you have guestions or need help finding additional information, contact Vanguard Participant Services at 800-523-1188.

**Investment performance and expenses** The table below provides important information about your investment options (as of March 31, 2023)

The performance data shown represents past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at www.vanguard.com/performance.

	Annual expense ratio			Average A			
International Equity	As a %	Per \$1000	1 year	5 year	10 year	Since fund inception <sup>1</sup>	Fund inception date
American Funds EuroPacific Growth Fund (R6)	0.46%	\$4.60	-3.26%	3.25%	5.99%		05/01/2009
Benchmark: MSCI All Country World ex-US NR Index			-5.07%	2.47%	4.17%		
Shareholder-type fees: Sales charge: None Redemption fee: None I	Deferred sales	charge: No	ne				
Vanguard Total Intl. Stock Index Fund (Adm)	0.11%	\$1.10	-4.62%	2.49%	4.43%		11/29/2010
Benchmark: MSCI World NR Index			-7.02%	8.01%	8.85%		

Shareholder-type fees: Sales charge: None Redemption fee: None Deferred sales charge: None

Risk: Foreign investing involves additional risks including currency fluctuations and political uncertainty. Stocks of companies in emerging markets are generally more risky than stocks of companies in developed countries.

	Annual exp				nnual Retu		
Domestic Equity	As a %	Per \$1000	1 year	5 year	10 year	Since fund inception <sup>1</sup>	Fund inception date
Carillon Eagle Mid Cap Growth Fund (R6) Benchmark: Russell Mid Cap Growth Index	0.64%	\$6.40	-11.30% -8.52%	8.67% 9.07%	12.00% 11.17%		08/15/2011
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ie				
J Hancock Disciplined Value Fund (R6) Benchmark: Russell 1000 Value Index	0.66%	\$6.60	-5.22% -5.91%	7.41% 7.50%	9.48% 9.13%		09/01/2011
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ie				
JPMorgan Large Cap Growth Fund (R6) Benchmark: Russell 1000 Growth Index	0.51%	\$5.10	-9.06% -10.90%	15.11% 13.66%	15.80% 14.59%		11/30/2010
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ne				
Loomis Sayles Small Cap Growth Fund (N) Benchmark: Russell 2000 Growth Index	0.82%	\$8.20	-7.13% -10.60%	7.70% 4.26%	10.49% 8.49%		02/01/2013
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ie				
MFS Mid Cap Value Fund (R6) Benchmark: Russell Mid Cap Value Index	0.63%	\$6.30	-5.70% -9.22%	8.30% 6.54%	9.66% 8.80%		02/01/2013
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ne				
Principal SmallCap Value Fund II (R6) Benchmark: Russell 2000 Value Index	0.96%	\$9.60	-4.38% -12.96%	6.81% 4.55%	N/A N/A	7.06% 5.95%	11/25/2014
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ne				
Vanguard Extended Market Index Fund (Adm) Benchmark: S&P Completion Index	0.06%	\$0.60	-14.15% -14.27%	6.04% 5.93%	8.91% 8.81%		11/13/2000
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ne				
Vanguard Institutional Index Fund (Inst) Benchmark: S&P 500 Index	0.035%	\$0.35	-7.76% -7.73%	11.16% 11.19%	12.21% 12.24%		07/31/1990
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	ne				
Vanguard PRIMECAP Fund (Adm) Benchmark: S&P 500 Index	0.31%	\$3.10	-4.75% -7.73%	9.90% 11.19%	13.32% 12.24%		11/12/2001
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	1e				
Vanguard Value Index Fund (Inst) Benchmark: CRSP U.S. Large Cap Value Index	0.04%	\$0.40	-3.98% -3.95%	8.86% 8.87%	10.52% 10.56%		07/02/1998
Shareholder-type fees: Sales charge: None Redemption fee: Nor	ne Deferred sales	charge: Nor	1e				

Risk: Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Funds that concentrate on a relatively narrow market sector face the risk of higher share-price volatility.

Balanced /anguard Target Retirement 2020 Fund	As a %	Per	1 year	5 year	10 vear	Since fund	
/anguard Target Retirement 2020 Fund		\$1000		2	i o year	inception <sup>1</sup>	Fund inceptio date
	0.08%	\$0.80	-5.26%	4.30%	5.77%	•	06/07/2006
Benchmark: Target Retirement 2020 Composite Index			-5.12%	4.66%	6.06%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ie				
/anguard Target Retirement 2025 Fund	0.08%	\$0.80	-5.91%	4.77%	6.35%		10/27/2003
Benchmark: Target Retirement 2025 Composite Index			-5.68%	5.21%	6.68%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ie	_	_	_	
/anguard Target Retirement 2030 Fund	0.08%	\$0.80	-6.22%	5.21%	6.89%		06/07/2006
Senchmark: Target Retirement 2030 Composite Index			-6.00%	5.64%	7.21%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ne				
/anguard Target Retirement 2035 Fund	0.08%	\$0.80	-6.36%	5.68%	7.43%		10/27/2003
Senchmark: Target Retirement 2035 Composite Index			-6.21%	6.11%	7.76%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ie				
/anguard Target Retirement 2040 Fund	0.08%	\$0.80	-6.53%	6.12%	7.91%		06/07/2006
Benchmark: Target Retirement 2040 Composite Index	0.0070	<i><b>Q</b></i> 0.00	-6.43%	6.55%	8.25%		00,07,2000
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ne				
/anguard Target Retirement 2045 Fund	0.08%	\$0.80	-6.70%	6.59%	8.22%		10/27/2003
Senchmark: Target Retirement 2045 Composite Index			-6.67%	7.01%	8.56%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ie				
/anguard Target Retirement 2050 Fund	0.08%	\$0.80	-6.71%	6.66%	8.26%		06/07/2006
Benchmark: Target Retirement 2050 Composite Index			-6.71%	7.08%	8.59%		
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	ie				
/anguard Target Retirement 2055 Fund	0.08%	\$0.80	-6.67%	6.66%	8.24%		08/18/2010
Benchmark: Target Retirement 2055 Composite Index	0.0076	ψ0.00	-6.71%	7.08%	8.59%		00, 10, 2010
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	e Deferred sales	charge: Nor	1e				
/anguard Target Retirement 2060 Fund	0.08%	\$0.80	-6.67%	6.65%	8.24%		01/19/2012
Benchmark: Target Retirement 2060 Composite Index	0.0070	-0.00	-6.70%	7.08%	8.59%		, .,, 2012
Senchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	11.83%		
hareholder-type fees: Sales charge: None Redemption fee: None	Deferred est	charge: Ne					

	Annual exp	oense ratio		Average Annual Return			
Balanced	As a %	Per \$1000	1 year	5 year	10 year	Since fund inception <sup>1</sup>	Fund inception date
Vanguard Target Retirement 2065 Fund	0.08%	\$0.80	-6.64%	6.64%	N/A	7.34%	07/12/2017
Benchmark: Target Retirement 2065 Composite Index			-6.71%	7.08%	N/A	7.73%	
Benchmark: MSCI U.S. Broad Market GR Index			-8.48%	10.57%	N/A	4.17%	
Shareholder-type fees: Sales charge: None Redemption fee: No	one Deferred sales	charge: Nor	ne				
Vanguard Target Retirement 2070 Fund	0.08%	\$0.80	N/A	N/A	N/A	7.73%	06/28/2022
Benchmark: Target Retirement 2070 Composite Index			N/A	N/A	N/A	7.40%	
Benchmark: MSCI U.S. Broad Market GR Index			N/A	N/A	N/A	7.40%	
Shareholder-type fees: Sales charge: None Redemption fee: No	one Deferred sales	charge: Nor	ne				
Vanguard Target Retirement Income Fund	0.08%	\$0.80	-4.50%	3.26%	3.79%		10/27/2003
Benchmark: Target Retirement Income Composite Index			-4.44%	3.53%	4.03%		
Benchmark: Bloomberg U.S. Aggregate Bond Index			-4.78%	0.91%	1.36%		

Shareholder-type fees: Sales charge: None Redemption fee: None Deferred sales charge: None

Risk: Target-date investments are subject to the risks of their underlying funds. The year in the investment name refers to the approximate year (the target date) when an investor would retire and leave the workforce. The investment will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. A target-date investment is not guaranteed at any time, including on or after the target date.

Please note, when reviewing performance of a blended fund (a fund that invests in a mix of stocks, bond and/or money market instruments, like a Target Date Fund or balance fund), it may be useful to compare fund returns to composite benchmarks comprised of multiple broadbased indices based on the fund's composition, goals and objectives. A broadbased securities market index has also been provided as required by Department of Labor regulation.

	Annual exp	oense ratio		Average Annual Return			
Bond	As a %	Per \$1000	1 year	5 year	10 year	Since fund inception <sup>1</sup>	Fund inception date
Metropolitan West Tot. Return Bond Fund (P)	0.36%	\$3.60	-5.79%	1.14%	1.61%		07/29/2011
Benchmark: Bloomberg U.S. Aggregate Bond Index			-4.78%	0.91%	1.36%		
Shareholder-type fees: Sales charge: None Redemption fee: None	Deferred sales	charge: No	ne				
Vanguard Total Bond Market Index Fund (Inst)	0.035%	\$0.35	-4.70%	0.93%	1.34%		09/18/1995

-4.78%

0.91%

1.36%

Shareholder-type fees: Sales charge: None Redemption fee: None Deferred sales charge: None

Benchmark: Bloomberg U.S. Aggregate Bond Index

Risk: Investments in bond funds are subject to interest rate, credit, and inflation risk. While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Although the market values of government securities are not guaranteed and may fluctuate, the timely payment of principal and interest is guaranteed by the U.S. Government. High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings.

	Annual expense ratio			Average Annual Return			
	As a %	Per	1 year	5 year	10 year		Fund inception
Short-Term Reserves		\$1000				inception <sup>1</sup>	date
Vanguard Retirement Savings Trust III	0.29%	\$2.90	1.86%	2.02%	1.99%		09/05/2001
Benchmark: FTSE U.S. Treasury-Bill 3-Month Index			2.61%	1.40%	0.85%		

Shareholder-type fees: Sales charge: None Redemption fee: None Deferred sales charge: None

A stable value investment is neither insured nor guaranteed by the U.S. government. There is no assurance that the investment will be able to maintain a stable net asset value, and it is possible to lose money in such an investment.

<sup>1</sup>Performance data is since inception date of the fund, if less than 10 years of performance is available.

#### Fee information

The cumulative effect of fees and expenses can substantially reduce the growth of your retirement savings. Visit the Department of Labor's website for an example showing the long-term effect of fees and expenses at <a href="https://www.dol.gov/sites/dolgov/files/ebsa/about-ebsa/our-activities/resource-center/publications/a-look-at-401k-plan-fees.pdf">https://www.dol.gov/sites/dolgov/files/ebsa/about-ebsa/our-activities/resource-center/publications/a-look-at-401k-plan-fees.pdf</a>. Fees and expenses are only one of many factors to consider when you decide to invest in an option. You may also want to think about whether an investment in a particular option, along with your other investments, will help you achieve your financial goals.

Please visit http://retirementplans.vanguard.com/PubFundChart/graftech/7190 for updated fee and performance information for each of these investment alternatives, along with additional information regarding the investment's issuer, objectives and goals, principal strategies and risks and portfolio turnover rate.

To better understand your investment options, please also visit https://retirementplans.vanguard.com/VGApp/pe/Glossary for a glossary of terms.

#### Fee/expense definitions

**Total annual operating expense (gross expense ratio)** – The investment fund's annual operating expenses, often expressed as a percentage of average net assets. The total annual operating expense does not reflect any fee waivers or reimbursements that may be in effect.

**Sales charge** – A charge deducted from the amount invested when shares of a fund are initially purchased. The amount is generally relative to the amount of the investment, so that larger investments incur smaller rates of charge.

**Redemption fee** – The redemption fee is an amount charged when shareholders redeem shares of a fund within a specified number of days following the purchase of those shares. The redemption fee is intended to allow funds to recoup some of the costs incurred as a result of short-term trading strategies, such as market timing.

**Deferred sales charge** – This charge is imposed when investors redeem shares. The percentage charged generally declines the longer shares are held.

Liquidity Fee – A money market fund must impose (unless determined by its board) a liquidity fee of 1% on all redemptions if the money market fund's weekly liquid assets fall below 10% of total assets; a money market fund's board may impose a liquidity fee of up to 2% on all redemptions if the fund's weekly liquid assets fall below 30% of total assets.

The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

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Money market yields more closely reflect the current earnings of a money market fund than the average annual total returns of such a fund.

Vanguard trusts are not mutual funds. They are collective trusts available only to tax-qualified plans and their eligible participants. Investment objectives, risks, charges, expenses, and other important information should be considered carefully before investing. The collective trust mandates are managed by Vanguard Fiduciary Trust Company, a wholly owned subsidiary of The Vanguard Group, Inc.

Collective trusts and separately managed accounts (SMAs) are not mutual funds. These investments are available only to tax-qualified plans and their eligible participants. Investment objectives, risks, charges, expenses, and other important information should be considered carefully before investing.

#### NOT FDIC INSURED

NO BANK GUARANTEE

MAY LOSE VALUE

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