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The VettaFi Natural Disaster Recovery and Mitigation Index

Index Rules and Methodology



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The VettaFi Natural Disaster Recovery and Mitigation Index

Official Rule Book

I. General Description

The VettaFi Natural Disaster Recovery and Mitigation Index (Ticker: VFFEMA) is an index of stocks listed on developed market recognized exchanges that are involved with the recovery and mitigation of natural disasters. Included in the Index are companies with government contracts for natural disaster recovery and mitigation, companies involved with home improvement retail and companies that are materially engaged in emergency/backup power generators and batteries.

VFFEMA uses an equal weighting methodology for all constituents.

II. The Index Committee

The VettaFi Index Committee (the “Committee”) has oversight responsibility for the Index. The Committee Chairman has extensive experience with and expertise in equity markets. The other members have experience with Indexes and/or financial products.

The Committee is principally responsible for overseeing the activities related to the Index methodology, reconstitutions and rebalancings.

The Committee meets quarterly, either in person or via teleconference, to discuss index issues and organize the reconstitutions and rebalancings.

The composition of the Committee may from time to time be changed to reflect changes in market conditions.

All members of the index committee and their advisors shall comply with the VettaFi code of conduct and ethics with respect to the disclosure and use of material non-public information.

III. Index Value at Inception

The VFFEMA Index had a value at inception of 1000, on its common inception date of March 20, 2020. The Index is calculated on a Price-only, Total Return, and Net Total Return basis.

IV. Eligibility Criteria, Selection and Weighting

To be eligible for inclusion in VFFEMA, an entity must be listed on a developed market recognized exchange and be a constituent of the S-Network Developed World Equity 5000 Index (“the parent index”). Additionally, companies must pass one of the following criteria: i) have a government contract for natural disaster response or mitigation, ii) have a Home Improvement Retail ICE sub-industry classification, or iii) have an Electrical Components & Power Equipment ICE sub-industry classification and be materially engaged in emergency/backup power generators or batteries. To be classified as “Materially Engaged” a company must have:

- 1) such revenues that represent more than 20% of the company’s total revenues and such revenues are independently reported in the company’s financial reports
- 2) applicable revenues that are likely to have a material impact on the company’s overall share price performance
- 3) research and development investments in the technology at the forefront of the company’s future initiatives, or
- 4) the company’s applicable business is likely to have a significant impact on the sector as a whole.

Possession of government contracts is determined using a keyword search on the Factset Revere Supply Chain Relationships database. The following keywords are used to obtain the list of companies and contracts: Hurricane, Wildfire, Earthquake, Flood, Typhoon, Storm, Landslide, Volcano, Heat Wave, Drought, Avalanche, Tsunami, Disaster Prevention, Generator, Landsat, Fire, Emergency, Relief, Response, Hazard, Geospatial, Water Treatment. For inclusion, a company must have a current government contract or a contract that has expired within the 5 years prior to the selection date. Additionally, companies whose only involvement is the communication of natural disasters occurring are excluded from the index.

Companies in the Diversified Defense Contractors, Aerospace Engineering & Components, Industrial Conglomerates ICE sub-industries and companies who are principally engaged in water utilities are excluded from the index. Non-constituent companies must have a company market capitalization of 250 million USD and a 3 month average daily trading value of 1 million USD on the date of selection. Current constituents must have a company market capitalization of 200 million USD and 3 month average daily trading value of 800 thousand on the selection day. If a constituent company’s market capitalization or 3 month average daily trading value falls below these thresholds on the last business day of the month prior to a rebalancing month it shall be removed from the index at the next rebalance.

The constituents of VFFEMA are equally weighted. The constituents’ Index Shares shall be based on prices as of the close of trading on the trade date preceding the second Friday of the rebalancing month, or the previous trade date in the event of a market holiday falling on that date (the “Weight Date”).

V. Rules for Reconstitutions, Rebalancings and Index Changes

The VFFEMA Index is calculated on an end-of-day (EOD) basis by VettaFi (the “EOD Calculation Agent”). The EOD Calculation Agent is also responsible for Index maintenance and price dissemination. The EOD Calculation Agent is responsible for the calculation of the Indexes. The calculation, maintenance and dissemination rules are as follows:

Index Changes. The VFFEMA Index is rebalanced quarterly effective at the open of trading on the Monday following the third Friday of the third month of each calendar quarter or the next trade date in the event of a market holiday (the “Effective Date”). Index changes take place at each rebalancing Effective Date, except in the event of certain intramonth corporate actions, such as mergers, acquisitions, and delistings. In such cases, the change is applied on the effective date of the action, unless otherwise determined by the Index Committee. Share increases and decreases are reflected on the rebalancing Effective Date. Whenever possible, changes will be announced at least two business days prior to their implementation.

Index Reconstitutions. The VFFEMA Index is reconstituted annually effective at the open of trading on the Monday following the third Friday of March or the next trade date in the event of a market holiday (the “Effective Date”).

Additions and Deletions. Additions to and Deletions from the Indexes are made 1) on the reconstitution Effective Date and 2) in the event of the deletion of a constituent stock due to a corporate action.

Deletions are made at any time, in the event a constituent is liquidated, delisted, files for bankruptcy, is acquired, or merges with another security. Upon the constituent’s deletion, the weight of the removed constituent is reallocated. Additions are made only upon the Effective Date of the reconstitution.

VI. Roles of Parties in the Quarterly Rebalancings

- i) The EOD Calculation Agent will screen the Indexes’ constituents to verify their continued eligibility as per requirements relevant to the rebalancing.
- ii) No later than the second Friday of the rebalancing month, the EOD Calculation Agent shall provide the Committee or its designee with lists of constituents and their corresponding Index Shares for the Indexes.
- iii) The Committee or its designee shall approve or reject the changes and notify the EOD Calculation Agent of its decisions no later than the Monday following the second Friday of the rebalancing month.
- iv) The EOD Calculation Agent will post all final rebalancing data and information on their FTP servers prior to the market open on the rebalancing Effective Date.

VII. Roles of Parties in the Annual Reconstitutions

- i) The EOD Calculation Agent will screen the VFFEA universe to identify those securities that meet all necessary eligibility criteria as of the last trade date of the month preceding the reconstitution month (the “Snapshot Date”).

- ii) The EOD Calculation Agent shall provide the Committee, or its designee, with lists of constituents for VFFEMA.
- iii) The Committee shall approve or reject the changes and notify the EOD Calculation Agent of its decisions no later than the Thursday preceding the second Friday of the reconstitution month.
- iv) No later than the Thursday preceding the second Friday of the reconstitution month, the Index Committee or its designee will issue a press release announcing additions and deletions to the Indexes. The press release will be posted on the Indexes' website.
- v) The EOD Calculation Agent will post all final reconstitution data and information on their FTP servers prior to the market open on the reconstitution Effective Date.

VIII. Ongoing Maintenance

- i) In addition to the scheduled annual review, the Index is reviewed on an ongoing basis. Changes in Index composition and related weight adjustments are necessary whenever there are extraordinary events such as liquidations, conversions, delistings, bankruptcies, mergers or takeovers involving Index components. In these cases, each event will be taken into account on its effective date. Whenever possible, the changes in an Index's components will be announced at least two business days prior to their implementation date.
- ii) Changes of Eligible Securities. In the event that a component no longer meets the relevant eligibility requirements described in Section IV herein, it will be removed from the Index on the effective date of the next reconstitution.
- iii) Changes of Sector Classification. Stocks are eligible for inclusion in the Indexes based on their inclusion in an applicable sector. Mergers, takeovers, and spin-offs may cause a stock to lose its eligibility. In such a circumstance, the stock will be deleted from the Index on the effective date of the next rebalancing. A stock's classification may also require an immediate change as the result of a special event such as a merger, takeover or spin-off.
- iv) Mergers. If two Index constituents merge, their component positions will be replaced by the surviving stock immediately. If an Index constituent merges with a non-component stock, it will be removed from the Index and its weight will be redistributed to all the remaining constituents on a proportional basis.
- v) Takeovers. If an Index component is taken over by another component stock, the former will be removed from the Index immediately upon completion of the takeover and the weight of the removed stock will be reallocated to the acquiring stock. If an Index component is taken over by a non-component stock, it will be removed from the Index and its weight will be redistributed to all the remaining constituents on a proportional basis.

- vi) Share Offerings, Tenders and Purchases. If a Rights Offering is in the money, the rights are exercised and the newly acquired shares are applied to the company issuing the rights. A divisor change is made to reduce the holdings of the remaining constituents in order to settle the acquisition of the rights. If the rights offering is out of the money, it expires worthless. Tender offers are not accepted, and no adjustments are made for self tenders or stock buybacks.
- vii) Removal of Stocks Due to Delisting, Bankruptcy or Extreme Financial Distress. If an Index constituent is delisted by its primary market, or is in bankruptcy proceedings, it will be removed from the Index.
 - * If an Index component is delisted by its primary market due to failure to meet financial or regulatory requirements, it will be removed from the Index and its weight will be reallocated to the remaining constituents in the Index.
 - * If an Index component enters bankruptcy proceedings, it will be removed from the Index and will remain ineligible for re-inclusion until it has emerged from bankruptcy. However, the Committee may, following a review of the bankrupt company and the issues involved in the filing, decide to keep the stock in the Index.
 - * The Committee may remove a stock it has determined to be in extreme financial distress from an Index if the Committee deems the removal necessary to protect the integrity of the Index and the interests of investors in products linked to the Index.
- viii) Pricing of Stocks in Extreme Financial Distress for Index Maintenance.
 - * When a stock is suspended from trading due to financial distress and subsequently delisted by its primary market prior to resumption of trading, the EOD Calculation Agent will use the best-available alternate pricing source to determine the value at which the stock should be removed from the Index.
 - * If the stock's primary market price is no longer available due to its suspension or delisting, a current price from another exchange, such as a regional or electronic marketplace, may be used. In the absence of those prices in the case of U.S. securities, OTC Bulletin Board, OTC Equity (non-OTCBB stocks), and Pink Sheet traded prices could be applied in that order.
 - * If neither a traded price nor a bid/asked range is available, the Committee will evaluate the status of the suspended stock. The Committee may consult with managers of portfolios linked to Indexes in which the stock is a constituent in determining the value of the stock. If the Committee concludes that the security has become worthless or is likely to remain too illiquid to be traded, it will be removed from the Index at .01 local currency of the stock.

IX. EOD Calculation and Adjustments

The EOD Calculation Agent will calculate closing values for both the Price and Total Return Index variants based on closing prices as reported by the relevant exchanges.

i) Input Data Sources

* EOD (closing) prices and corresponding exchange rates are provided by Refinitiv.

* The number of shares is determined separately for each class of stock. This information is obtained from regulatory filings and a variety of data vendors. The data also may be sourced from the constituent companies themselves.

* Corporate actions are sourced from public news services, regulatory filings and data vendors. The constituent companies themselves may be used as an additional source.

ii) Index Formula. The Indexes are calculated using a Laspeyres formula. This formula is used for the calculation of the return Index and the price Index. The only difference is that the divisor D_t is different for the two Index variants (Total Return Index and Price Index).

Each Index is computed as follows:

$$= \frac{\sum_{i=1}^n (p_{it} * q_{it})}{(C_t \sum_{i=1}^n (p_{i0} * q_{i0}))} * Base Index Value = \frac{M_t}{B_t} * Base Index Value$$

The above mentioned formula can be simplified as: $Index_t = \frac{M_t}{D_t}$

Where:

- $D_t = \frac{B_t}{\text{base index value}} = \text{divisor at time (t)}$
- $n =$ the number of stocks in the index
- $p_{i0} =$ the closing price of stock i at the base date
- $q_{i0} =$ the number of shares of stock i at the base date
- $p_{it} =$ the price of stock i at time (t)
- $q_{it} =$ the number of shares of stock i at time (t)
- $C_t =$ the adjustment factor for the base date market capitalization
- $t =$ the time the index is computed
- $M_t =$ market capitalization of the index at time (t)
- $B_t =$ adjusted base date market capitalization of the index at time

Dividend payments are not taken into account in the Price Index variant, whereas dividend payments are reinvested in the Index constituents of the Total Return and Net Total Return indexes on a proportional basis. The divisor adjustment protects the Index from the effects of changes in Index composition and the impact of corporate actions. See the “Adjustments for Corporate Actions” subsection below for details.

- iii) Divisor Adjustments. Corporate actions affect the share capital of component stocks and therefore trigger increases or decreases in an Index. To avoid distortion, the divisor of the Index is adjusted accordingly.
- iv) Changes in an Index’s market capitalization due to changes in the composition (additions, deletions or replacements), weighting (following quarterly reviews, corporate actions (mergers, or special cash or stock distributions of other stocks) result in a divisor change to maintain the Index’s continuity. By adjusting the divisor, the Index value retains its continuity before and after the event. For rights offerings, the EOD Calculation Agent will price the rights during the subscription period, not before or after. Alternatively, the EOD Calculation Agent may start pricing the rights after the ex-date and before the subscription period, under the condition that the rights are priced daily.

* Formulae for Divisor Adjustment. The following formulae will be used for divisor adjustments. (Note: No divisor adjustments are necessary for stock splits, since market capitalization does not change and the share number and share price are adjusted prior to the opening of trading on the split's ex-date.)

$$D_{t+1} = D_t * \left(\frac{\sum(p_{it} * q_{it}) \mp \Delta MC_{t+1}}{\sum(p_{it} * q_{it})} \right)$$

Where:

D_t = divisor at time (t)

D_{t+1} = divisor at time (t+1)

p_{it} = stock price of stock i at time (t)

q_{it} = number of shares of stock i at time (t)

ΔMC_{t+1} = add new components’ market capitalization and adjusted market capitalization (calculated with adjusted closing prices and shares effective at time t+1 and/or minus market capitalization of stocks to be deleted (calculated with closing prices and shares at time t)

Note: If the current trading price of an issue is unavailable, the previous trading session’s closing price is used. However, if the issue is affected by any corporate action that requires an adjustment, then the adjusted price is used.

* Adjustments for Corporate Actions. An Index divisor may decrease (▼) or increase (▲) or keep constant (■) when corporate actions occur for a component stock. Assuming shareholders receive “B” new shares and “A” shares are originally held for the following corporate actions:

▼ A) CASH DIVIDEND (applied for return Index only)
adjusted price = closing price - dividend announced by the stock

▼ B) SPECIAL CASH DIVIDEND (applied for price and return Index)
adjusted price = closing price - dividend announced by the stock

▼ C) SPIN-OFF
adjusted price per share = closing price per share – spinoff value

■ D) SPLIT AND REVERSE SPLIT

adjusted price = closing price * A / B

new number of shares = old number of shares * B / A

▲ E) RIGHTS OFFERING

adjusted price = (closing price * A + subscription price * B) / (A + B)

new number of shares = old number of shares * (A + B) / A

■ F) STOCK DIVIDEND

adjusted price = closing price * A / (A + B)

new number of shares = old number of shares * (A + B) / A

▼ G) STOCK DIVIDEND OF A DIFFERENT STOCK SECURITY

adjusted price = (closing price * A - price of the different stock security * B)/A

▲ H) COMBINATION STOCK DISTRIBUTION (DIVIDEND OR SPLIT) AND RIGHTS OFFERING

Shareholders receive B new shares from the distribution and C new shares from the rights offering for every A shares held:

* If rights are applicable after stock distribution (one action applicable to other).

adjusted price = [closing price * A + subscription price * C * (1 + B / A)] / [(A + B) * (1 + C / A)]

new number of shares = old number of shares * [(A + B) * (1 + C / A)] / A

* If stock distribution is applicable after rights (one action applicable to other).

adjusted price = [closing price * A + subscription price * C] / [(A + C) * (1 + B / A)]

new number of shares = old number of shares * [(A + C) * (1 + B / A)]

▲ I) STOCK DISTRIBUTION AND RIGHTS (NEITHER ACTION IS APPLICABLE TO THE OTHER)

adjusted price = [closing price * A + subscription price * C] / [A + B + C]

new number of shares = old number of shares * [A + B + C]

- v) Computational Precision. Values used in Index calculation are stored using up to 15 significant digits. Published Index levels are precise through six decimal places.

X. Calculation of Intraday Index Values

- i) The Intraday Calculation Agent will calculate intraday Index values using price data on each reported trade it receives on each component security.

- ii) The Intraday Calculation Agent will distribute Index values to vendors at set 15-second intervals, provided the Index value has changed from the previously distributed value.
- iii) The Index calculations will start each US trading day at 9:30 ET. At that time, the Index values will begin changing as new prices or exchange rates are processed.
- iv) Index calculation will cease each US trading day at 16:00 ET (unless earlier due to an early market closure) and official summaries will be disseminated between 17:00 ET and 19:00 ET.
- v) If, during periods when an Index is calculated, one or more relevant securities exchanges are closed, the Index calculation will continue using the last closing price for those constituents that trade on the closed exchange(s).
- vi) Constituent prices denominated in foreign currencies will be converted to USD and CAD with each reported price using exchange rates sourced from Refinitiv. Official closing prices for the Index constituents will be calculated using the WM snapshot rates as of 4:00 PM London time.

XI. Dissemination of Index Data

The EOD Calculation Agent will post the following files to its FTP server prior to 7:00PM ET each trading day:

Closing Index File (CLS.SNC) – Index constituents, closing prices, weights, share weights and related data as of the day’s close.

Adjusted Closing Index File (ADJ.SNC) – Index constituents, closing prices, weights, share weights and related data as of the next trading day’s open.

Corporate Action File (SNA) – Data related to upcoming corporate actions for the Index’s constituent stocks.

Index Values File (SNL) – Closing values for the price and total return Indexes, including divisors.

Closing values for the Indexes will be transmitted prior to 7:00PM ET for redistribution to various vendors and providers of financial data.

Index values are disseminated in US Dollars (USD) using the following tickers:

<u>Index Name</u>	<u>Index Ticker</u>
VettaFi Natural Disaster Recovery and Mitigation Index (USD)	VFFEMA
VettaFi Natural Disaster Recovery and Mitigation Total Return Index (USD)	VFFEMAT
VettaFi Natural Disaster Recovery and Mitigation Net Total Return Index (USD)	VFFEMAN
VettaFi Natural Disaster Recovery and Mitigation Index (EUR)	VFFEMAE
VettaFi Natural Disaster Recovery and Mitigation Total Return Index (EUR)	VFFEMAET
VettaFi Natural Disaster Recovery and Mitigation Net Total Return Index (EUR)	VFFEMAEN

Values for the Indexes are distributed daily prior to 7:00 PM ET Monday through Friday, excluding relevant exchange holidays.

XII. Data Correction Policy

To maintain a high standard of data integrity, a series of procedures have been implemented to ensure accuracy, timeliness and consistency. Input prices are monitored using a variety of computerized range-check warning systems for both ticker-plant and real-time Index systems. Fault tolerant methods are employed in the collection of market and corporate action data. Various verification and audit tasks are performed to ensure the quality of the real-time data feeds and related market data. While every effort is taken to ensure the accuracy of the information used for the Index calculation, an Index error may occur due to incorrect or missing data, including trading prices, exchange rates, shares outstanding and corporate actions, due to operational errors or other reasons.

- i) Index-Related Data and Divisor Corrections. Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an Index, if discovered within five days of its occurrence, will always be fixed on the day it is discovered to prevent an error from being carried forward.
- ii) If a divisor error is discovered more than five days after occurrence, the adjustment will depend upon how significant the error is, how far back the error occurred and the feasibility of performing the adjustment.

XIII. Review Schedule

Constituent Changes

Frequency: Annually

Effective date: The open of trading on the Monday following the third Friday of March, or the next trade date in the event of a market holiday

Advance notice: At least one business week

Quarterly Rebalance

Frequency: Quarterly

Effective date: The open of trading on the Monday following the third Friday of the third month of each calendar quarter, or the next trade date in the event of a market holiday

Advance notice: At least one business week

News Notification*

Frequency: As needed

Effective date: As announced

Advance notice: At least two business days whenever possible

* Includes events such as delistings, mergers, bankruptcies and other extraordinary events.

* Based on available news.

XIV. Methodology Changes

Effective Date	New	Old
3/01/2023	<ol style="list-style-type: none"> 1) Water Utility companies will not be included in the index. 2) Including a \$1mm 3 Month Average Daily Trading Value (3MADTV) screen for inclusion in the index. 3) A 20% buffer will be applied to the Market Cap and 3MADTV for current constituents. 	<ol style="list-style-type: none"> 1) Water Utility companies included in the index. 2) No 3 Month Average Daily Trading Value (3MADTV) inclusion screen. 3) No Market Cap and 3MADTV buffers for current constituents.