

**Index Methodology Guide for the  
FactSet Global Electric Vehicle and Rechargeable Battery  
Korea-Tilted Index™**

Version 2.0 – December 19, 2022

## Table of Contents

FactSet Global Electric Vehicle and Rechargeable Battery Korea-Tilted Index™ .....	1
Table of Contents .....	2
Index Introduction and Objective .....	3
Index Construction .....	4
Index Maintenance .....	13
Index Calculation and Data Correction .....	13
Additional Information.....	14

# Index Introduction and Objective

## 1.1 Index Overview

The FactSet Global Electric Vehicle and Rechargeable Battery Korea-Tilted Index is an equity benchmark designed to track the performance of global companies, with a South Korea companies tilt, that develop and manufacture electric vehicles (EV), batteries and battery materials, as well as their enabling technologies and automotive components.

The FactSet Global Electric Vehicle and Rechargeable Battery Korea-Tilted Index is a modified market capitalization weighted index reconstituted and rebalanced quarterly in February, May, August, and November.

The FactSet Global Electric Vehicle and Rechargeable Battery Korea-Tilted Index is calculated and maintained by Solactive AG – the Calculation Agent – based on a methodology developed by FactSet. It is calculated on a price, gross and net total return basis in U.S. Dollar (USD). The price, gross, and net total return values of the index are calculated on a real-time and an end-of-day basis, Monday to Friday 1:00 a.m. to 10:50p.m. CET (Central European Time). Index values are distributed via various data channels and market data vendors, including the price marketing services of Boerse Stuttgart AG. Index values of may also be obtained from FactSet upon request.

## 1.2 Inception Date and Base Value

The Index Inception Date was February 17, 2017, with a base value of 100.00. The inception date refers to when the first back-tested index value was calculated. The back test is based on a similar methodology used to calculate the index when it was officially launched on February 18, 2022.

## 1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday.

## 1.4 Commencement Date

The index commencement date was February 18, 2022. Commencement date refers to the stated date when the index was officially launched.

## 1.5 Reconstitution and Rebalance Schedule

The index is reconstituted and rebalanced quarterly after the close of the 3<sup>rd</sup> Friday of February, May, August, and November each year (“Reconstitution Day” and “Rebalance Day”).

If any of the existing or new index components is not trading on Reconstitution Day/Rebalance Day due to an exchange holiday, the reconstitution/rebalance is moved to the next business day.

The data used to reconstitute and rebalance the index is as of the close of 1<sup>st</sup> Friday of February, May, August, and November (“Selection Day”). Subsequent adjustment to the index composition may be made to account for corporate actions that occur between the Selection Day and the Reconstitution Day or Rebalance Day.

# Index Construction

## 2.1 Constituent Selection and Weighting Schema

1. The securities are primarily listed in one of the following **50** exchanges:

- Athens Exchange
- Australia Stock Exchange
- BM&F Bovespa
- Bolsa de Valores de Lima
- Bombay Stock Exchange\*
- Borsa Istanbul
- Borsa Italiana
- Budapest Stock Exchange
- Bursa Malaysia
- Colombia Stock Exchange
- Cyprus Stock Exchange
- Deutsche Borse Xetra
- Euronext Amsterdam
- Euronext Brussels
- Euronext Dublin
- Euronext Lisbon
- Euronext Paris
- Hong Kong Exchange
- Indonesia Stock Exchange
- JASDAQ
- Johannesburg Stock Exchange
- Korea Stock Exchange
- London Stock Exchange
- Madrid Stock Exchange
- Mexican Stock Exchange
- NASDAQ
- NASDAQ Dubai
- New York Stock Exchange
- New Zealand Stock Exchange
- NYSE American
- OMX Nordic Copenhagen
- OMX Nordic Helsinki
- OMX Nordic Stockholm
- Oslo Stock Exchange
- Philippine Stock Exchange
- Prague Stock Exchange
- Qatar Stock Exchange
- Santiago Stock Exchange
- Shanghai Stock Exchange\*\*
- Shenzhen Stock Exchange\*\*
- Singapore Exchange
- SIX Swiss Exchange
- Stock Exchange of Thailand
- Taipei Exchange
- Taiwan Stock Exchange
- Tel Aviv Stock Exchange
- Tokyo Stock Exchange
- Toronto Stock Exchange
- Vienna Stock Exchange
- Warsaw Stock Exchange

\*Securities listed in Bombay Stock Exchange must also be listed in the National Stock Exchange of India (NSE) to be eligible. In addition, NSE listed securities prices would be used for index return calculation.

\*\*Must also be eligible in the Hong Kong – China Stock Connect Program for buying and selling.

2. The securities are common stocks\*\*\* and ADR.
3. The securities have a minimum security level float-adjusted market capitalization of U.S. \$100 million or greater, and a three-month Average Daily Trading Value (ADTV) of U.S. \$1 million or greater. If a company has multiple share classes, only include the most liquid issue based on the highest three-month ADTV on Selection Day.
4. Securities whose float% is less than 10% are excluded.
5. Securities are assigned to the below granular electric vehicle and battery technology categories provided they meet the specific industry % revenue exposure and/or supply-chain relationships criteria.

5a.

Category 1A – Electric Vehicle Manufacturers	
RBICS Level 6 Industry	RBICS Level 6 ID
Alternative Energy Car Manufacturers	202010151020
Multi-Type Car Manufacturers	202010151010
Heavy-Duty Industrial Batteries Manufacturing	401015101535
Mixed Heavy-Duty and High-End Batteries Manufacturing	401015101520
Electric Vehicle Batteries Manufacturing	401015101545

To be assigned to Category 1A, securities must have a % revenue exposure of 50% or greater from the RBICS Level 6 Industry “Alternative Energy Car Manufacturers,” or are classified as Focus to the RBICS Level 6 Industry “Alternative Energy Car Manufacturers,” or are classified as Focus to the RBICS Level 6 Industry “Multi-Type Car Manufacturers” and has revenue exposure from at least one of the two RBICS Level 6 Industries “Heavy-Duty Industrial Batteries Manufacturing” and “Mixed Heavy-Duty and High-End Batteries Manufacturing.”

\*\*\*Preferred securities that exhibit similar characteristics as common stocks with primary difference being voting power are also eligible.

5b.

Category 1Ba – Automotive Vehicle Components	
RBICS Level 6 Industry	RBICS Level 6 ID
Auto Exterior Comfort/Safety/Electronics Products	202010101010
Auto Interior Comfort/Safety/Electronics Products	202010101015
Automotive and Marine Electronics Manufacturing	551525151010
Chassis and Body Manufacturing	202010101510
Commercial/Public Service Vehicle Component Makers	401025101010
Conventional Flat Panel Display Equipment	551520301010
Diversified Electrical/Power System Manufacturing	401015151010
Diversified Electronic Components	551010301010
Diversified Industrial Distribution	401520201010
Diversified Industrial Manufacturing	401020302510
Electric Motors Manufacturing	401015101010
Electrical Systems and Equipment Manufacturing	401015101515
Electronic Interconnect Components	551010101510
Electronics Manufacturing Equipment Manufacturing	551025101010
Fuse Passive Electronic Components	551010251010
Lighting Equipment and Components Manufacturing	401015151515
Material Handling/Conveyor Equipment Manufacturing	401020151015
Motion Control and Precision Motors Manufacturing	401015101020
Multi-Industry-Specific Factory Machinery Makers	401020151525
Multi-Process Assembly Services	551015101510
Multi-Type Motor Vehicle Parts Manufacturers	202010102510
Optoelectronics Electronic Components	551010201010

Other Auto Comfort, Safety and Electronic Products	202010101020
Other Electric Motors and Motion Control Products	401015101025
Other Industrial Electrical Product Manufacturing	401015101525
Other Module and Subassembly Electronic Components	551010151010
Other Passive Electronic Components	551010252510
Pan-Powertrain and Chassis Manufacturing	202010101515
Power Module and Subassembly Electronic Components	551010151510
Power Transmission and Distribution Products	401015201020
Powertrain and Chassis Thermal Management Products	202010101525
Powertrain Manufacturing	202010101520
Traffic Safety and Management Equipment Products	401025104010
Vehicle Autonomous Control Electronics Makers	202010101025

To be assigned to Category 1Ba, securities must have an aggregated % revenue exposure of 25% or greater from the RBICS Level 6 Industries in the aforementioned Category 1Ba and are suppliers or partners to the selected Category 1A securities in Step 5a.

5c.

Category 1Bb – Automotive Technology Hardware	
RBICS Level 6 Industry	RBICS Level 6 ID
Diversified Semiconductors	551020201010
Diversified Technology Hardware	551520251510
General Analog and Mixed Signal Semiconductors	551020101010
Image Sensor and Image Capture Semiconductors	551020401515
Other Communications Semiconductors	551020401015
Other Discrete Semiconductors	551020151510
Other Memory Semiconductors	551020251510

Other Optoelectronics Discrete Semiconductors	551020151015
Other Power Analog and Mixed Signal Semiconductors	551020101510
Other Processor Semiconductors	551020303010
Other Satellite Equipment	551515302010
Peripheral Semiconductors	551020402510
Programmable Logic Device Semiconductors	551020351510
Specialty Analog and Mixed Signal Semiconductors	551020103010
Autonomous Vehicles Semiconductors	551020103020
General Automotive Semiconductors	551020103015
Volatile Memory Semiconductors	551020252010
Microprocessor (MPU) Semiconductors	551020302510
Video Multimedia Semiconductors	551020401525
Battery Charging Equipment Manufacturing	401015101550

To be assigned to Category 1Bb, securities must have an aggregated % revenue exposure of 25% or greater from the RBICS Level 6 Industries in the aforementioned Category 1Bb and are suppliers or partners to the selected Category 1A securities in Step 5a.

5d.

Category 1Bc – Automotive Technology Software	
RBICS Level 6 Industry	RBICS Level 6 ID
Communications Infrastructure Software	552015351010
Computer Aided Design (CAD) Software	552015101010
General and Mixed-Type Software	552015401010
Global Positioning Systems (GPS) Manufacturing	551515301510
International Mobile Satellite Services	601010201015
Manufacturing and Scientific/Technical Services	101015152025



Multi-Type Business and Personal Systems	551520151510
Multi-Type Home and Office Software	552015252510
Transportation Industry Software	401510151015
United States Satellite Services	601010452010
Vehicle Autonomous Control Software	201510102020
Web Navigation Sites and Software	552010351510
Productivity Software	552015253010

To be assigned to Category 1Bc, securities must have an aggregated % revenue exposure of 25% or greater from the RBICS Level 6 Industries in the aforementioned Category 1Bc and are suppliers or partners to the selected Category 1A securities in Step 5a.

5e.

Category 2Aa – Electric Vehicle Battery Manufacturers	
RBICS Level 6 Industry	RBICS Level 6 ID
Electric Vehicle Batteries Manufacturing	401015101545

To be assigned to Category 2Aa, securities must have a % revenue exposure of 25% or greater from the RBICS Level 6 Industry “Electric Vehicle Batteries Manufacturing .”

5f.

Category 2Ab – Battery Manufacturers	
RBICS Level 6 Industry	RBICS Level 6 ID
Heavy-Duty Industrial Batteries Manufacturing	401015101535
Mixed Heavy-Duty and High-End Batteries Manufacturing	401015101520
Traditional Car Batteries Manufacturing	401015101555

To be assigned to Category 2Ab, securities must have an aggregated % revenue exposure of 25% or greater from the RBICS Level 6 Industries in the aforementioned Category 2Ab, and are suppliers or partners to the selected Category 1A securities in Step 5a.

5g.

Category 2B – Battery Materials	
RBICS Level 6 Industry	RBICS Level 6 ID
Lithium Compounds Manufacturing	451020303015
Multi-Type Fertilizers Manufacturing	451020201015
Backup, Emergency and Standby Power Products	401015101510
Lithium Ore Mining	451525101040
Electronic Materials Manufacturing	451020301510
Metal Processing and Metal Service Centers	451510202515
Other Metal Processing and Recycling Providers	451510202530
Cobalt Ore Mining	451525101035
Nickel Ore Mining	451525101025

To be assigned to Category 2B, securities must have an aggregated % revenue exposure of 25% or greater from the RBICS Level 6 Industries in the aforementioned Category 2B, and are suppliers or partners to the selected Category 2Aa, 2Ab, or 1A securities in Step 5e, 5f, or 5a.

6. Divide securities into South Korea listed and non-South Korea listed, then rank them by their float adjusted market capitalization within the following granular electric vehicle and battery technology categories where Category 1A, 2Aa, 2Ab are considered to be High Priority (A) and Category 1Ba, 1Bb, 1Bc, 2B are considered to be Low Priority (B).
7. Select the top 10 ranked South Korea listed securities and the top 40 ranked non-South Korea listed securities.

A 20% buffer will be applied during index reconstitution and rebalance, such that two existing South Korea listed constituents could remain in the index if their rankings are 11<sup>th</sup> to 12<sup>th</sup>; eight existing non-South Korea listed constituents could remain the index if their rankings are 41<sup>st</sup> to 48<sup>th</sup>; however, this buffer rule does not apply when there are less than 10 South Korea listed securities.

8. If the aforementioned Steps 1 to 7 result in less than 45 constituents, then Steps 5b, 5c, 5d, 5f, and 5g shall be relaxed such that instead of the securities being suppliers or partners to Category 1A securities in Step 5a, they need to be only suppliers or partners to securities that are classified to RBICS Focus Level 3 Industry is “Consumer Vehicles and Parts” (RBICS Level 3 ID: 202010).
9. Constituent weights are determined by dividing their individual security-level float adjusted market capitalization by the total float adjusted market capitalization of all constituents.

Furthermore, (i) South Korea listed securities’ index weight shall be allocated 20%, and non-South Korea listed securities at 80%. (ii) High Priority (A)’s individual securities are capped at no more than 8% of the index weight, with excess weight redistributed to non-capped securities from the same geographic categories (i.e. South Korea or non-South Korea); Low Priority (B)’s individual securities are capped at no more than 4% of the index weight, with excess weight redistributed to non-capped securities from the same geographic categories.

If the above weight constraints cannot be achieved, then (ii) shall be prioritized over (i).

In addition to the above selection schema, FactSet may at its discretion modify one or more selection criteria to ensure relevant and timely capture of the theme.

## 2.2 Index Return Formulas

The price, gross and net total return levels of the index are calculated using the following formulas.

$$I_{(t)} = \frac{\sum_{i=1}^n S_{i(t)} \times P_{i(t)} \times FX_{i(t)}}{D_{(t)}}$$

where:

$I_{(t)}$  = Index value on Index Valuation Day (t)

$D_{(t)}$  = Divisor on Index Valuation Day (t)

$n$  = Number of stocks in the index

$P_{i(t)}$  = Closing price of stock (i) on Index Valuation Day (t)

$S_{i(t)}$  = Number of allocated shares of stock (i) on Index Valuation Day (t)

$FX_{i(t)}$  = WM Reuters FX rate published at 4:00pm London time on Index Valuation Day (t) required to convert closing price of stock (i) in index currency, USD

and on Inception Date, where (t) = 0, the initial divisor is calculated as follows:

$$D_{(0)} = \frac{\sum_{i=1}^n S_{i(0)} \times P_{i(0)} \times FX_{i(0)}}{I_{(0)}}$$

where:

$I_{(0)}$  = Price Returns Index value on Index Inception Date

$D_{(0)}$  = Divisor on Index Inception Date

$n$  = Number of stocks in the index on Index Inception Date

$P_{i(0)}$  = Price of stock (i) on Index Inception Date  
 $S_{i(0)}$  = Number of allocated shares of stock (i) on Index Inception Date  
 $FX_{i(t)}$  = WM Reuters FX rate published at 4:00pm London time on Index Valuation Day (t) required to convert closing price of stock (i) in index currency, USD.

Allocated shares (“S”) are the number of shares required for each constituent such that all constituents are weighted according to the index methodology. Allocated shares (“S”) would be adjusted accordingly to account for Corporate Actions.

Net total return is calculated to account for the effect of tax withholding on dividends by adjusting dividend taken out due to tax payment.

### 2.3 Index Divisor Adjustments

From time to time, the index divisor is adjusted to account for corporate actions that could distort index value and continuity using the following formula:

$$D_{(t+1)} = D_{(t)} \times \frac{\sum_{i=1}^n AS_{i(t+1)} \times AP_{i(t+1)} \times FX_{i(t)}}{\sum_{i=1}^n S_{i(t)} \times P_{i(t)} \times FX_{i(t)}}$$

where:

$D_{(t+1)}$  = Divisor for Index Valuation Day (t+1) after CA and rebal adjustment  
 $D_{(t)}$  = Divisor for Index Valuation Day (t)  
 $AP_{i(t+1)}$  = Adjusted price of stock (i) calculated for open on Index Valuation Day (t+1) after CA adjustment  
 $P_{i(t)}$  = Closing price of stock (i) on Index Valuation Day (t)  
 $S_{i(t)}$  = Number of allocated shares of stock (i) on Index Valuation Day (t)  
 $AS_{i(t+1)}$  = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t+1) after CA adjustment.

Divisor adjustments are generally implemented on the date the corporate action becomes effective, such that for example, the ex-dividend date rather than the payment date is used to time the divisor adjustment.

Find below a detailed calculation for AP, AS, and S in case of corporate actions and rebalancing.

$AP_{i(t)}$  = Adjusted price of stock (i) is determined for the open on Index Valuation Day (t) shall mean:

- If index constituent opens ex-date in respect of the corporate action, then  $AP_{i(t)}$  is determined as per Corporate Action Adjustment Section.
- Otherwise

$$AP_{i(t)} = P_{i(t-1)}$$

$S_{i(t)}$  = Number of allocated shares of stock (i) on Index Valuation date (t) is determined as

$$S_{i(t)} = AS_{i(t)}$$

$AS_{i(t)}$  = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t) after CA adjustment is determined as:

- If such day opens immediately following the Rebalancing Day (t-1) and if:

- index constituent opens ex-date in respect to corporate action, then  $AS_{i(t)}$  is determined as per Corporate Action Adjustment Section with  $S_{i(t-1)}$  replace with:

$$S_{i(t-1)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)} \times FX_{i(t-1)}}$$

- index constituent does not opens ex-date in respect to corporate action, then  $AS_{i(t)}$  is determined as:

$$AS_{i(t)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)} \times FX_{i(t-1)}}$$

- On any other day:

- index constituent opens ex-date in respect to corporate action, then  $AS_{i(t)}$  is determined as per Corporate Action Adjustment Section
- Otherwise:

$$AS_{i(t)} = S_{i(t-1)}$$

where  $Weight_{i(t-1)}$  is determined as per Section 2.1.

## 2.4 Corporate Action Adjustments

### Special Cash Dividend:

$$AP_{i,t} = P_{i,t-1} - D_{i,t} \times FX_{d,t-1}$$

Where

$t$  = Index Valuation Date (t) is ex-date for corporate action.

$D_{i,t}$  = Dividend amount corresponding to stock (i) with ex-date (t).

$FX_{d,t-1}$  = WM Reuters FX rate published at 4:00pm London time fixing on Index Valuation Day (t) required to convert dividend amount in underlying stock currency, USD.

### Spin-off Adjustment

If an index constituent (i.e. the parent company) distributes part of its business into a spun-off company, the spun-off company will be added to the Index according to the transaction terms on the ex-date.

The parent company will remain in the Index with unchanged calculation parameters. The spun-off company will remain in the Index until the next ordinary rebalancing.

The spun-off company will be added to the Index with an open price of zero on ex-date.

If the spun-off company does not start to trade on the effective date (i.e. ex-date), a theoretical price for the spun-off company will be implemented (**see the equation below**) as a fixed price until it commences trading, from which time official prices will be used.

$$P_{f(t)} = [P_{i(t-1)} - AP_{i(t)}] \times \text{Share Ratio}_{i(t)} \times FX_{j,t-1}$$

Where

$P_{i(t-1)}$  = Closing price of Parent Company on Index Valuation Date (t-1).

$AP_{i(t)}$  = Open price of Parent Company on Index Valuation Date (t).

$P_{f(t)}$  = Price of Spun-off Company on Index Valuation Date (t).

$FX_{j,t-1}$  = WM Reuters FX rate published at 4:00pm London time fixing on Index Valuation Day (t) required to convert dividend amount in underlying stock currency, USD.

### Rights Issue Adjustment

$$AP_{j,t} = \frac{P_{j,t-1} + C_{j,t} \times \text{Share Ratio}_{j,t}}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

Where

$C_{j,t}$  = Official tender price.

### Stock Splits Adjustment

$$AP_{j,t} = \frac{P_{j,t-1}}{\text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times \text{Share Ratio}_{j,t}$$

### Stock distribution

$$AP_{j,t} = P_{j,t-1} \times \frac{1}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

## Index Maintenance

Constituent changes may occur between review periods due to corporate events that disqualify their eligibility for index inclusion. Adjustments to corporate events are described below:

### 3.1 Corporate Actions – Delisting and Fast Entry

A constituent is removed immediately after being delisted from its primary markets.

### 3.2 Corporate Actions – Merger/Acquisition and Fast Entry

If a merger or acquisition results in one constituent acquiring another, the acquiring company remains a constituent, and the acquired company is removed. If a non-constituent acquires a constituent, the acquired constituent is removed. If a constituent acquires a non-constituent, the acquiring constituent remains a constituent.

### 3.3 Corporate Actions – Spin-off

If a constituent spins or splits off a portion of its business, both the spun-off companies and the parent companies (with the highest market value relative to the spun-off companies) will be kept in the index, and be considered for removal from the index at the next Reconstitution or Rebalance Day should they fail to meet the eligibility criteria in Section 2.1.

### 3.4 Corporate Actions – Bankruptcy

If a constituent is delisted after bankruptcy, it will be removed immediately with a price of 0 from the index.

## Index Calculation and Data Correction

### 4.1 Index Calculation

Price, gross, and net total return values for the FactSet Global Electric Vehicle and Rechargeable Battery Korea-Tilted Index are calculated by Solactive AG. The price, gross, and net total return values are calculated on a continuous and end-of-day basis by using the trading price for each component in the index from relevant exchanges and markets. Index values are rounded to 2 decimal places and divisors are rounded to 6 decimal places.

If trading in a stock is suspended prior to the market opening, the stock's adjusted closing price from the previous day will be used in the index calculation until trading commences. If trading in a stock is suspended while the relevant market is open, the official closing price published by relevant exchange for that stock will be used for all subsequent index calculations until trading resumes.

In case of exceptional market conditions disrupting normal closing auction, or causing official closing prices not being available, Solactive and FactSet reserve the right to utilize other prices in the calculation of the official closing level.

#### 4.2 Data Correction

Incorrect index constituent data, corporate action data, or index divisors will be corrected upon detection. If such errors are discovered within five days of occurrence, they will be corrected retroactively on the day of discovery. If discovered after five days, corrective actions will be decided based on the errors' significance and feasibility of a correction.

#### 4.3 Decision Making in Undocumented Events

A FactSet Index Committee consisting of select employees of FactSet Research Systems Inc. is responsible for amending rules as documented in the Index Methodology Guide due to undocumented or extraordinary events.

## Additional Information

### 5.1 Contact Information

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