



# Innovation Meets Sustainability:

Nasdaq-100 ESG Index™

December 2022

# Index Objectives

- Reduce the degree to which the portfolio's economic value is at risk because of ESG factors, or more technically, aim to significantly improve the portfolio's ESG score;
- Exclude enterprises that create reputational risks or violate fundamental values;
- Eliminate business exposures that are off-limit for most ESG-conscious investors; and
- Aim to deliver similar performance and very low tracking error to the Nasdaq-100® (NDX™).

# Index Mechanics

- Each ESG Index at all times consists of a selection of securities in the Nasdaq-100 Index.
- The Nasdaq-100 Index is reconstituted annually in December.
- The ESG characteristics of the underlying issuers are re-evaluated each quarter (March, June, September, December). Hence, there is a reconstitution and a rebalancing *each quarter*.
- Securities removed from the Nasdaq-100 Index outside of a reconstitution are removed from Nasdaq-100 ESG Index (NDXESG™) *and are not replaced*.

# Weighting Scheme

- The NDXESG Index is a modified market capitalization-weighted index that considers a company's ESG Risk Rating Score as an adjustment factor.
- Two factors play into the index weight of an issuer:
  - The Nasdaq-100 Market Value, and
  - The ESG Risk Rating Score.
- In general, for each issuer:
  - Everything else equal, the higher the weight in the Nasdaq-100 and/or the better ESG risk rating, the higher the weight in the NDXESG Index, and vice versa.

# Exclusions December 2022: NDXESG

Symbol	Nasdaq-100 ESG Reason for Exclusion	Nasdaq-100 Weight (%)	Company Name	ICB Industry
HON	Revenue from military contracting weapons. Provide non-nuclear materials for nuclear weapons and involved in management of labs where nuclear weapons are designed and tested.	1.32	Honeywell International	Industrials
ADI	Revenue from military contracting weapon-related products and/or services.	0.77	Analog Devices	Technology
AEP	Revenue from thermal coal power generation, nuclear production, and oil & gas generation.	0.45	American Electric Power Company	Utilities
EXC	Revenue from nuclear production.	0.39	Exelon	Utilities
XEL	Revenue from thermal coal power generation, nuclear production, oil & gas production, and oil & gas generation.	0.35	Xcel Energy	Utilities
GFS	ESG Risk Rating Score has not yet been determined.	0.27	GlobalFoundries Inc.	Technology
BKR	Revenue from oil & gas supporting products/services.	0.27	Baker Hughes Co.	Energy
CEG	ESG Risk Rating greater than 40. Revenue from nuclear production and oil & gas generation.	0.26	Constellation Energy Corp	Utilities
FANG	ESG Risk Rating greater than 40. Revenue from oil & gas production. Involvement in shale energy extraction and/or production.	0.22	Diamondback Energy Co.	Energy
WBD	ESG Risk Rating Score has not yet been determined.	0.21	Warner Bros Discovery Inc.	Consumer Discretionary

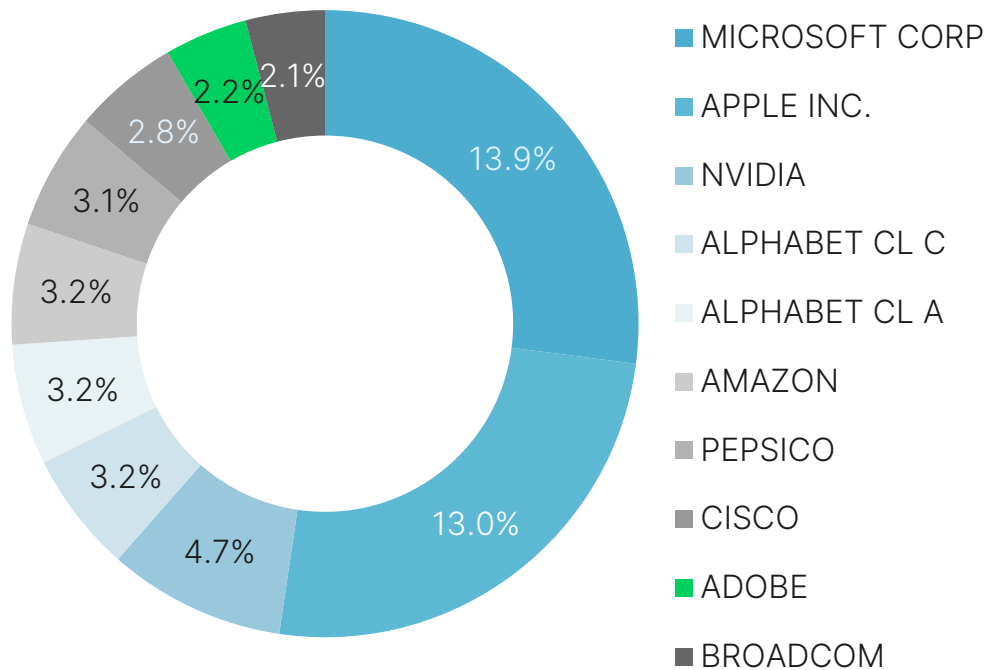


Data as of EOD 12/30/2022.

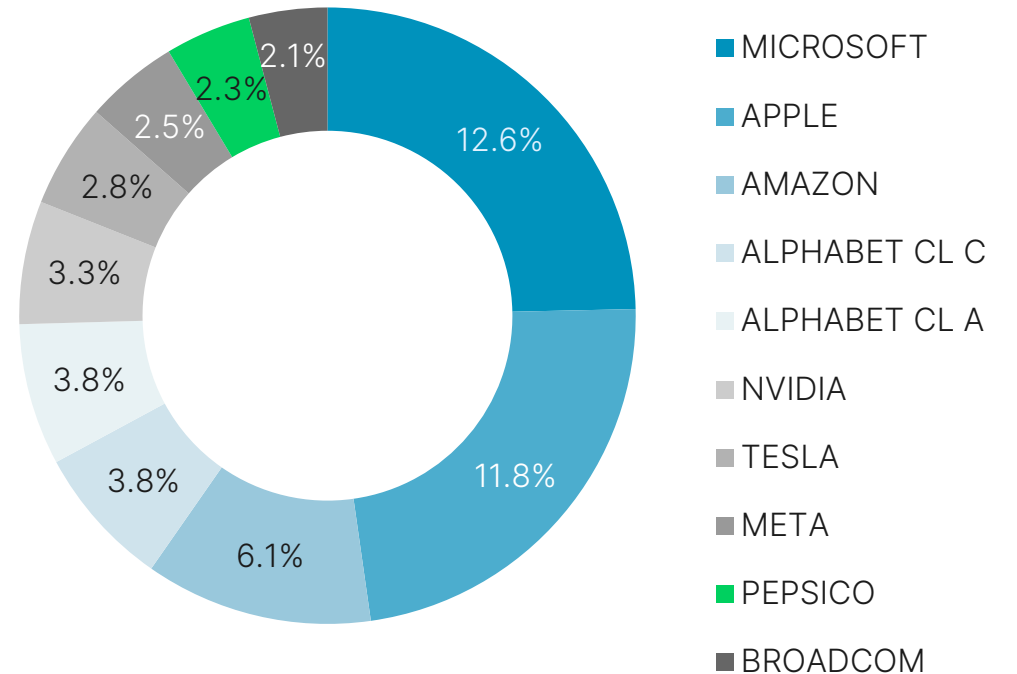
Sources: Sustainalytics, Nasdaq Global Indexes.

# Top 10 Constituents: NDXESG vs NDX

NDXESG: Top 10 Weight = 51.3%

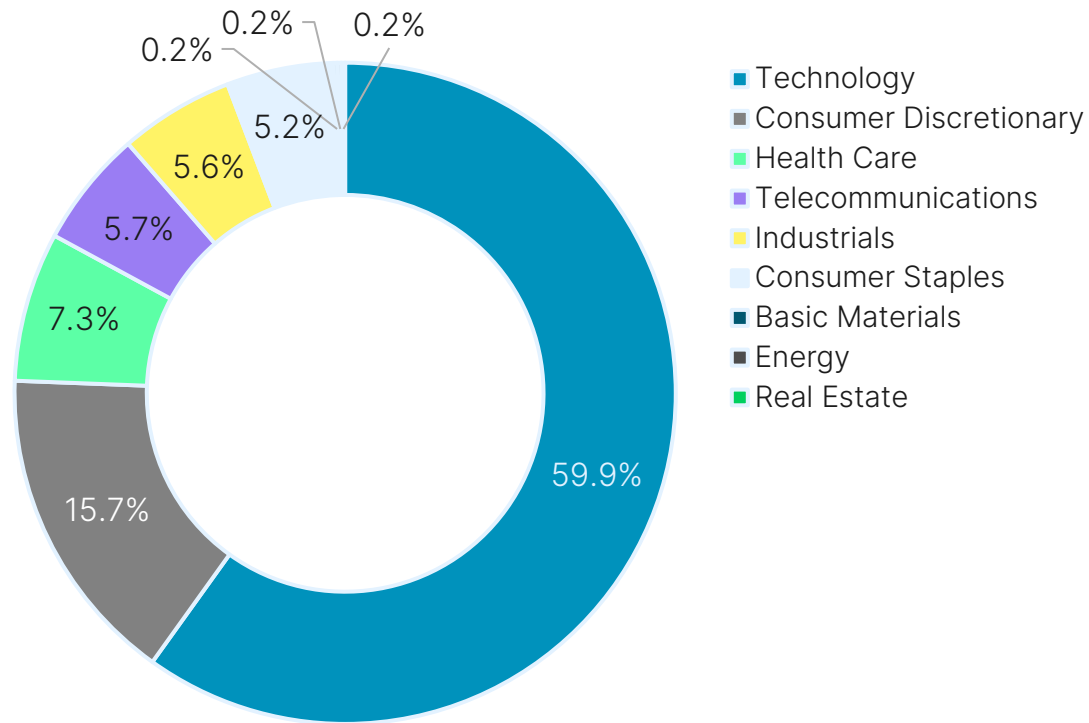


NDX: Top 10 Weight = 51.3%

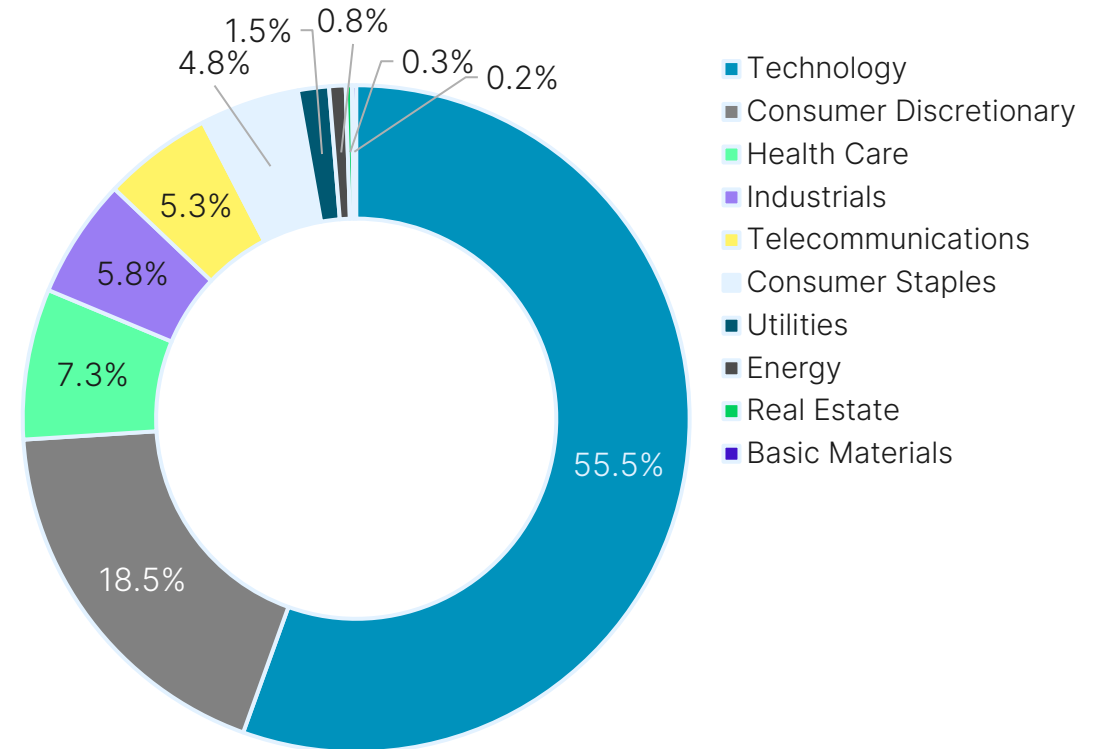


# Sector Exposures: NDYESG vs NDX

NDYESG Index Weight by ICB Industry

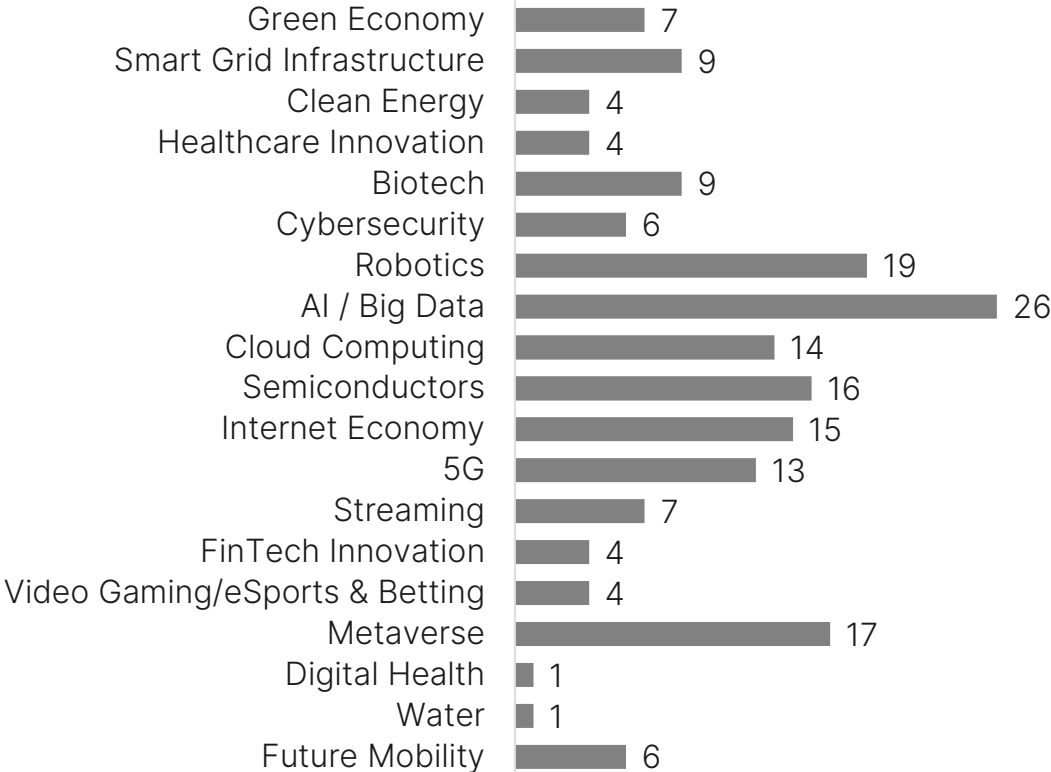


NDX Index Weight by ICB Industry

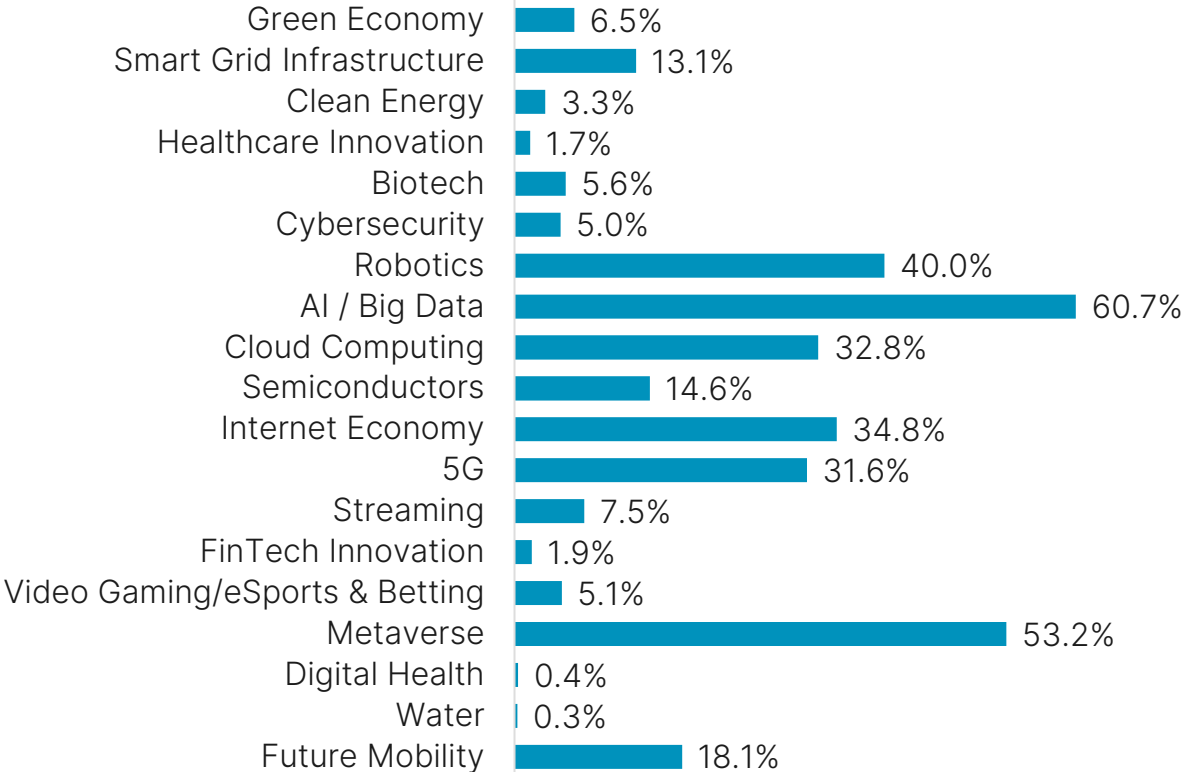


# Nasdaq-100 by Thematic Exposures

# of Constituents per Theme



Index Weight per Theme

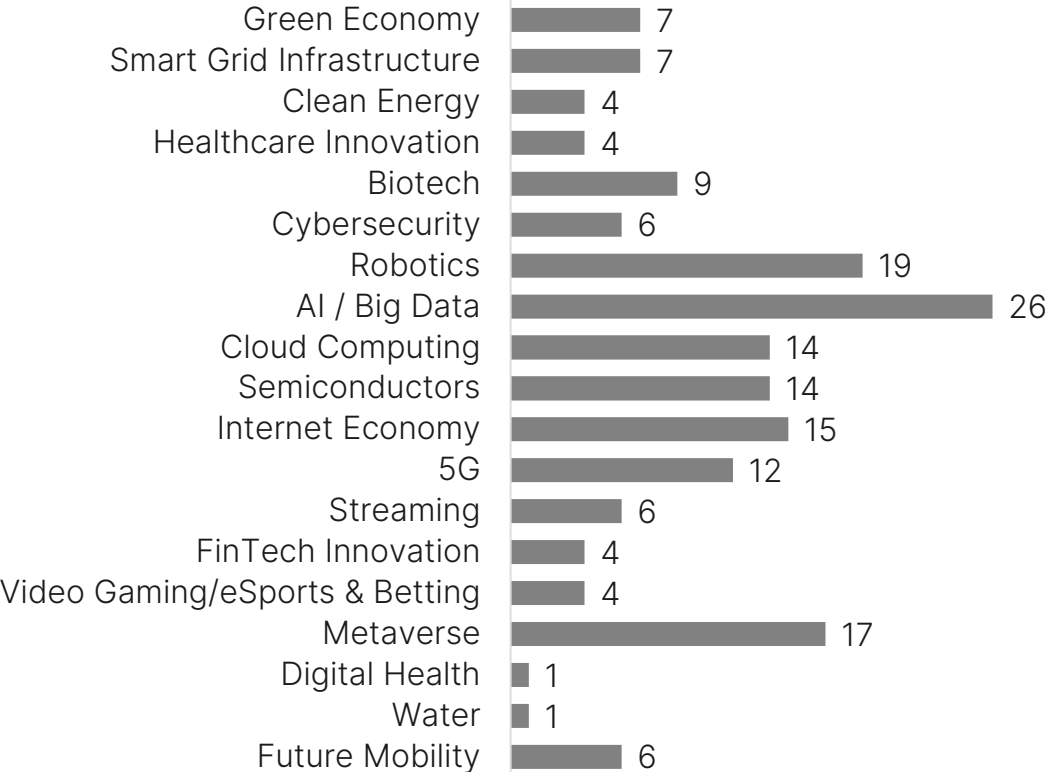


Source: Nasdaq, FactSet. Data as of 12/30/2022.  
 Based on overlap with existing Nasdaq Thematic Indexes, except for 5G, Streaming, and Video Gaming/eSports & Betting where competitor products were analyzed.

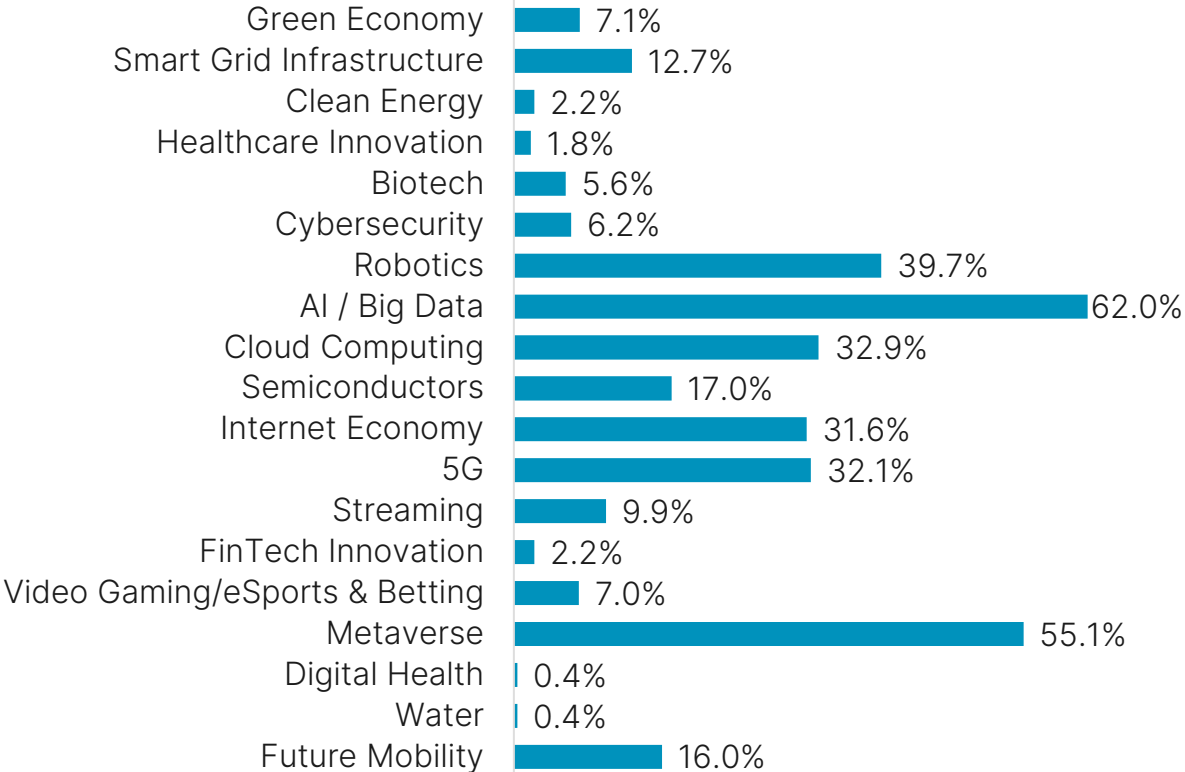


# Nasdaq-100 ESG by Thematic Exposures

# of Constituents per Theme



Index Weight per Theme



Source: Nasdaq, FactSet. Data as of 12/30/2022.  
 Based on overlap with existing Nasdaq Thematic Indexes, except for 5G, Streaming, and Video Gaming/eSports & Betting where competitor products were analyzed.

# Top 10 Largest Overweights: NDXESG vs NDX

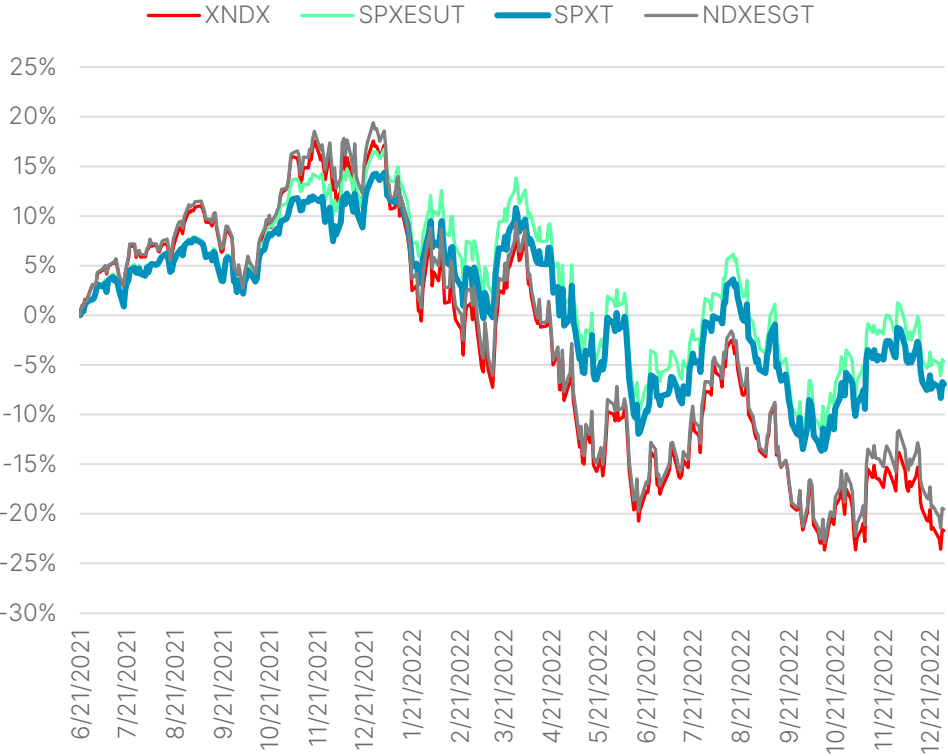
Symbol	Nasdaq-100 ESG Weight (%)	Nasdaq-100 Weight (%)	Difference Weight (%)	Company Name	ICB Industry
NVDA	4.7	3.3	1.4	NVIDIA Corp.	Technology
MSFT	13.9	12.6	1.3	Microsoft Corp.	Technology
AAPL	13.0	11.8	1.2	Apple Inc.	Technology
CSCO	2.8	1.8	1.0	Cisco Systems Inc.	Telecommunications
ADBE	2.2	1.4	0.8	Adobe Inc.	Technology
PEP	3.1	2.3	0.8	PepsiCo Inc.	Consumer Staples
AMAT	1.2	0.8	0.5	Applied Materials	Technology
ADP	1.3	0.9	0.4	Automatic Data Processing	Industrials
NFLX	1.6	1.2	0.4	Netflix Inc.	Consumer Discretionary
QCOM	1.5	1.1	0.4	Qualcomm Inc.	Technology

# Top 10 Largest Underweights: NDXESG vs NDX

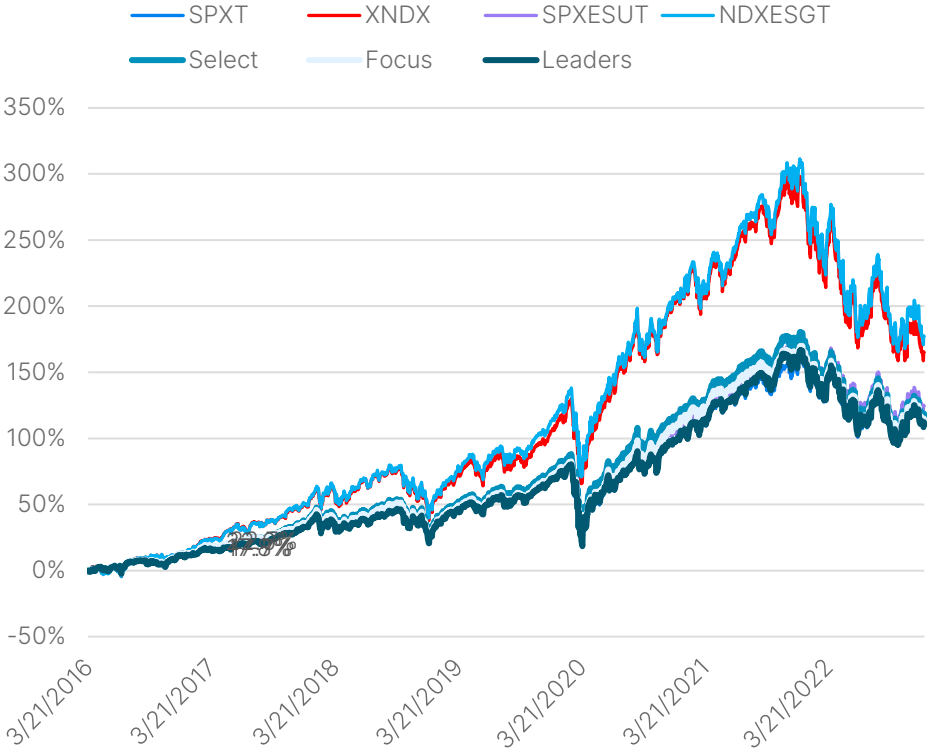
Symbol	Nasdaq-100 ESG Weight (%)	Nasdaq-100 Weight (%)	Difference Weight (%)	Company Name	ICB Industry
AMZN	3.2	6.1	-2.9	Amazon	Consumer Discretionary
META	0.8	2.5	-1.7	Meta	Technology
TSLA	1.8	2.8	-1.0	Tesla	Consumer Discretionary
GOOG	3.2	3.8	-0.6	Alphabet Cl C	Technology
GOOGL	3.2	3.8	-0.6	Alphabet Cl A	Technology
KHC	0.1	0.5	-0.3	Kraft Heinz	Consumer Staples
TMUS	1.3	1.6	-0.3	T-Mobile	Telecommunications
MRNA	0.4	0.6	-0.3	Moderna	Health Care
MNST	0.3	0.5	-0.2	Monster Beverage	Consumer Staples
COST	1.7	1.9	-0.2	Costco	Consumer Discretionary

# Performance – NDX vs. NDXESG

Since Inception  
6/21/2021 – 12/30/2022



Since Beginning of Backtest  
3/21/2016 – 12/30/2022



# ESG Comparisons – NDX/NDXESG

Index	Benchmark	Number of Securities	% Exclusion from the Benchmark	Weighted Average	Simple Average
				Sustainalytics ESG Risk Score	Sustainalytics ESG Risk Score
MSCI USA Index	--	624	n/a	21.6	21.8
MSCI USA Extended ESG Focus Index	MSCI USA Index	308	51%	20.7	21.1
MSCI USA Extended ESG Leaders Index	MSCI USA Index	273	56%	19.2	20.0
MSCI USA ESG Universal Select Business Screens Index	MSCI USA Index	579	7%	20.1	21.3
Nasdaq-100 Index	--	101	n/a	20.5	20.8
Nasdaq-100 ESG Index	Nasdaq-100 Index	91	10%	18.5	20.0
S&P 500 Index	--	503	n/a	21.5	21.6
S&P 500 ESG Index	S&P 500 Index	304	40%	20.7	20.6

# RESOURCES

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## RESOURCES

# Nasdaq-100 ESG Index

- Overview
  - <https://indexes.nasdaqomx.com/Index/Overview/NDXESG>
- Methodology
  - [https://indexes.nasdaqomx.com/docs/methodology\\_NDXESG.pdf](https://indexes.nasdaqomx.com/docs/methodology_NDXESG.pdf)
- Research
  - [https://indexes.nasdaqomx.com/docs/NDXESG\\_Research.pdf](https://indexes.nasdaqomx.com/docs/NDXESG_Research.pdf)
- Fact Sheet
  - [https://indexes.nasdaqomx.com/docs/FS\\_NDXESGT.pdf](https://indexes.nasdaqomx.com/docs/FS_NDXESGT.pdf)
- Carbon Credit Report
  - NDXESG: <https://indexes.nasdaqomx.com/docs/Carbon%20Footprint%20Report%20-%20NDXESG.pdf>
  - NDX: <https://indexes.nasdaqomx.com/docs/Carbon%20Footprint%20Report%20-%20NDX.pdf>



# APPENDIX

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## Exclusions based on ESG risk

- Companies with a “Severe” ESG Risk Rating are automatically disqualified from inclusion.
  - A rating of greater than 40 is considered “Severe”; 30-40 is considered “High”; 20-30 is “Medium”; 10-20 is “Low”; and 0-10 is “Negligible”.
- Exclude any company that has not been researched yet.

## Exclusions based on ESG risk – continued

- Exclude any company that has a controversy score equal to 5:
  - The controversy rating reflects:
    - Incidents with negative Environmental, Social and Governance (ESG) implications.
    - A company's level of involvement in and how it manages these issues.
  - Categorical scores are on a scale of 1 to 5.

# Exclusions based on international norms

- A company must not violate the *United Nations Global Compact*:
  - 10 principles around human rights, labor, environment, and anti-corruption.
  - <https://www.unglobalcompact.org/what-is-gc/mission/principles>
- Securities are excluded from NDXESG that are classified as non-compliant.
  - Each company in the index is therefore classified as either compliant or on the watch-list with the UN Global Compact framework for following international norms.

## APPENDIX

# Exclusions based on business involvements

## Business Involvement Considered\*:

1. Energy (Arctic oil & gas, nuclear power, oil & gas, oil sands, shale energy, thermal coal)
2. Health & Life (Alcohol, recreational cannabis, tobacco)
3. Defense & Military (controversial weapons, military contracting, riot control, small arms)
4. Values-Based (adult entertainment, gambling)

## Weighting scheme – continued

$$ESG\ Risk - Adjusted\ NDX\ Market\ Value = \frac{40 - ESG\ Risk\ Rating\ Score}{40} \times NDX\ Market\ Value$$

- Initial security weights are calculated by dividing a security's ESG Risk-Adjusted NDX Market Value by the sum of the ESG Risk-Adjusted NDX Market Values of all Index Securities.
- Afterwards, the same four-stage weight adjustment process as exists for NDX at its annual reconstitution is applied to produce final weights on a quarterly basis for NDXESG.

## APPENDIX

# Weighting scheme – continued

Security	Parent Index Market Value	ESG Risk Rating Score	(40-ESG Risk Rating Score)/40	ESG Adjusted Market Value	Weight in ESG Index (before capping)	Weight in Parent Index	ESG Excess Weight
Company A	157,440,900.96	9.669091	0.76	119,383,139.64	5%	2%	3%
Company B	408,425,550.79	10.14988	0.75	304,788,747.93	12%	5%	7%
Company C	466,765,510.49	10.33926	0.74	346,115,277.80	14%	6%	8%
Company D	337,399,212.20	10.56613	0.74	248,274,134.49	10%	4%	6%
Company E	36,052,270.56	12.02819	0.70	25,211,182.25	1%	0%	1%
Company F	590,398,129.57	16.18527	0.60	351,504,303.67	14%	7%	7%
Company G	268,545,835.16	19.19268	0.52	139,692,956.82	6%	3%	2%
Company H	311,917,708.29	20.84302	0.48	149,385,045.36	6%	4%	2%
Company I	547,470,308.53	22.79236	0.43	235,516,830.87	10%	7%	3%
Company J	24,733,442.74	24.69826	0.38	9,461,619.64	0%	0%	0%
Company K	435,838,825.61	27.38121	0.32	137,493,977.85	6%	5%	0%
Company L	118,577,295.32	27.73561	0.31	36,356,957.07	1%	1%	0%
Company M	307,719,744.86	28.36004	0.29	89,546,103.32	4%	4%	0%
Company N	441,090,355.41	33.1488	0.17	75,549,938.88	3%	6%	-2%
Company O	834,726,757.15	35.35263	0.12	96,982,201.14	4%	10%	-7%
Company P	550,834,597.82	37.24048	0.07	38,001,025.35	2%	7%	-5%
Company Q	269,359,777.85	37.4192	0.06	17,379,073.33	1%	3%	-3%
Company R	844,981,656.98	38.72938	0.03	26,841,302.95	1%	11%	-10%
Company S	359,845,558.64	39.02818	0.02	8,742,612.50	0%	5%	-4%
Company T	646,652,051.08	39.70698	0.01	4,736,994.67	0%	8%	-8%

*For Illustrative Purposes Only.*

*The information included on this slide is not based on actual data.*



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