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INDXX HYDROGEN ECONOMY INDEX METHODOLOGY

CONTENTS

1. INDXX HYDROGEN ECONOMY INDEX.....	2
1.1 INDEX DESCRIPTION.....	2
1.2 CREATION OF MASTER LIST.....	2
1.2.1 Initial Universe	2
1.2.2 Free Float	2
1.2.3 Maximum Price	2
1.2.4 Security Type	2
1.2.5 Share Classes.....	3
1.3 SECURITY SELECTION PROCESS	3
1.4 FINAL COMPOSITION.....	4
1.5 WEIGHTING	4
1.6 BUFFER RULES	5
1.6.1 Market Capitalization	5
1.6.2 Liquidity.....	5
1.7 RECONSTITUTION AND REBALANCING RULES	5
1.8 CORPORATE ACTIONS	5
2. APPENDIX.....	6
2.1 METHODOLOGY CHANGES.....	6
3. DISCLAIMER.....	7

1. INDXX HYDROGEN ECONOMY INDEX

1.1 INDEX DESCRIPTION

The Indxx Hydrogen Economy Index tracks the performance of companies that provide goods and/or services towards the Hydrogen Industry, including hydrogen generation and storage, transportation and supply of hydrogen, fuel cells, and hydrogen fueling stations.

The index has a base date of November 30, 2018 with an initial value of 1,000.

The index is currently available in the following version:

- Price Return
- Total Return
- Net Total Return

1.2 CREATION OF MASTER LIST

1.2.1 Initial Universe

To be eligible for inclusion in the Initial Universe, securities must have:

- Their listing in Developed and Emerging Markets excluding India and Vietnam as defined by Indxx in its 'Country Classification and Investability Requirements' document.
- A minimum total market capitalization of \$100 million.
- A 6-month average daily turnover greater than or equal to \$1 million.
- The security must have traded on 90% of the eligible trading days in the last 6 months. In case a security does not have a trading history of 6 months (only IPOs), such a security must have started trading at least 3 months before the start of the Reconstitution/Rebalancing Process and should have traded on 90% of the eligible trading days for the past 3 months.

1.2.2 Free Float

All securities must have a minimum free float equivalent to 10% of shares outstanding.

1.2.3 Maximum Price

Securities trading at a price of \$10,000 or above are ineligible for inclusion in the Index. This rule is not applicable for existing constituents. Existing constituents shall remain in the Initial universe irrespective of their stock price.

1.2.4 Security Type

The following security types are eligible for inclusion:

- Common Stock
- ADR
- GDR
- DR

1.2.5 Share Classes

- The existing share class/listing in the portfolio is retained if it satisfies all the eligibility criteria of the index.
- If an ADR of the company exists, it is given preference over all other share classes.
- The most liquid share class/listing is considered for inclusion.

1.3 SECURITY SELECTION PROCESS

Based on extensive research, Indxx has defined Hydrogen Economy as being comprised of the following sub-themes:

Sub-Theme	Description
Fuel Cell and Battery	Companies manufacturing and selling fuel cells and batteries that are run on hydrogen-based technology.
Hydrogen Production and Generation	Companies that are involved in the process of hydrogen generation. It can produce hydrogen in either liquid or solid form.
Membrane and Catalyst	Companies that design and produce membrane, filters, catalyst or membrane assemblies for Fuel Cell or Hydrogen related technologies.
Hydrogen Systems and Solutions	Companies that offer equipment, components or technology used in hydrogen industry. Those involved in providing solutions and systems to the value chain across Hydrogen generation, storage, and supply.
Hydrogen Storage and Supply	Companies engaged in providing storage and transportation services of hydrogen. It also includes companies that supply hydrogen to various users and operate Hydrogen Fueling Stations across countries.

Companies involved in business activities associated with these sub-themes will be eligible for inclusion. The sub-themes identified through this research-based approach are subject to change at the time of the reconstitution.

Companies are classified into one of the following types based on revenue:

- **Pure Play:**

Companies from the Master List that derive revenue greater than or equal to 50% from the above sub-themes are considered as 'pure-play' companies. These companies are included in the 'Selection List' for the index.

- **Quasi Play:**

Companies with diversified revenue streams that generate at least 20% (but less than 50%) of their revenue from the above sub-themes are considered as 'quasi-play' companies. These companies are also included in the 'Selection List' for the index.

- **Marginal Play:**

Companies with diversified revenue streams that generates less 20% of their revenue from the above sub-themes or that are relevant to the above-mentioned sub-themes are considered as 'marginal-play' companies. These companies are also included in the 'Selection List' for the index.

1.4 FINAL COMPOSITION

From the selection list:

- The top 30 'Pure-Play' companies by largest market capitalization will form the final portfolio.
- If fewer than 30 'Pure-Play' companies qualify for inclusion, then the 'Quasi-Play' companies by largest market capitalization are considered from the "Core" group in a cyclical manner, based on the ranking of the sub-themes within the group, till the count reaches 30. If the companies from the "Core" group are exhausted and the portfolio size is still below 30, the process is repeated over the "Semi-Core" sub-themes.
- If the number of eligible 'Pure-Plays' and 'Quasi-Plays' is still below 30, the above cyclical process is conducted over the 'Marginal' companies until the portfolio size reaches 30.
- The sub-themes mapped to the groups and their ranking within the groups are as follows:

Sub-Theme	Group	Sub-Theme Rank within Group
Hydrogen Production and Generation	Core	1
Hydrogen Storage and Supply		2
Fuel Cell and Battery		3
Hydrogen Systems and Solutions	Semi-Core	1
Membrane and Catalyst		2

1.5 WEIGHTING

The index is weighted as follows:

- Components are weighted based on their free float adjusted security market capitalization.
- A single security can have a maximum weight of 8% and minimum weight of 1%. The excess weight is redistributed proportionately amongst the uncapped securities.
- The aggregate weight of securities with weight greater than or equal to 5% must not exceed 45%. In case the aggregate weight exceeds 45%, a secondary cap of 4.5% is applied. The excess weight is redistributed proportionately amongst the uncapped securities.
- In case, the 'Pure-Play' constituents are fewer than 30 then we will also follow below rules:
 - An aggregate weight cap will be assigned based on the number of constituents cumulatively in 'Quasi-Play' and 'Marginal-Play':

Constituents	Aggregate Weight Cap for Quasi-Play and Marginal-Play
>12 Quasi and Marginal Play	40%
6-11 Quasi and Marginal Play	25%
<6 Quasi and Marginal Play	10%

- 'Pure-Play' companies must have a minimum weight of 1% while 'Quasi-Play' and 'Marginal' companies must have a minimum weight of 0.5%. The required weight is derived proportionately from the uncapped securities.

- In case the capping of weights becomes infeasible based on the aggregate weight, then we lower the single security cap in steps by 1 % for 'Quasi-Play' and 'Marginal-Play' companies followed by 'Pure-Play' companies (if required), until it becomes feasible.
- In case number of Pure-Plays drops significantly, to an extent that the weighting scheme becomes infeasible, the 'Quasi-Play' and 'Marginal-Play' basket cap is increased in steps of 5%, until it becomes feasible.

1.6 BUFFER RULES

Buffer Rules are employed to reduce Portfolio Turnover. The following buffer rules apply:

1.6.1 Market Capitalization

A constituent shall continue to be included in the Initial Universe if its market capitalization is greater than or equal to 80% of the previously defined market capitalization limit. To illustrate, if an existing index member qualifies all other selection criteria but doesn't qualify the market capitalization criteria to the extent of 20% deviation then it will be retained in the investible universe.

1.6.2 Liquidity

A constituent shall continue to be included in the Initial Universe if its 6-month ADTV is greater than or equal to 70% of the previously defined liquidity limit. To illustrate, if an existing index member qualifies all other selection criteria but doesn't qualify liquidity criteria to the extent of 30% deviation then it will be retained in the investible universe.

1.7 RECONSTITUTION AND REBALANCING RULES

- The index follows an annual reconstitution and quarterly rebalancing schedule. The reconstituted portfolio becomes effective at the close of last trading day of October each year. This day is called the 'Reconstitution Effective Day'. The rebalanced portfolio becomes effective at the close of last trading day of January, April, July. This day is called the 'Rebalance Effective Day'.
- The security selection and portfolio creation process start on the close of the nearest Friday falling at least 2 months before the Reconstitution Effective Day, called the 'Selection Day.' The selection list is created based on the data as of the Selection Day.
- Public announcement and client communication of the new index composition will be made at the close of last trading day of September each year.
- Weights are calculated at the close of the Seventh trading day prior (six trading days prior) to the Reconstitution Effective Day (or the Rebalance Effective Day). Index Shares are frozen using weights as of this day.

1.8 CORPORATE ACTIONS

The corporate action guidebook is present in the Announcements section of our website, under 'Index Documents.'

2. APPENDIX

2.1 METHODOLOGY CHANGES

Methodology changes since April 2021 are as follows:

Section	Previous Value	New Value	Effective Date (close)
1.3	<p>Companies that belong to the FactSet Revere Business Industry Classification System (RBICS) Subsectors listed in the APPENDIX (Section 2) are considered to be eligible. The RBICS Subsectors and sub-themes identified through this research-based approach are subject to change at every annual reconstitution.</p> <p>These sub-themes are comprised of companies that derive a cumulative revenue of 50% or more across the listed FactSet RBICS Subsectors and companies that derive any revenue from RBICS Subsectors: 'Industrial Gas Manufacturing and 'Fuel Cell Equipment and Technology Providers'.</p>	<p>Companies involved in business activities associated with these sub-themes will be eligible for inclusion. The sub-themes identified through this research-based approach are subject to change at the time of the reconstitution.</p>	April 15, 2021
2	Appendix (Details of RBICS subsectors) Removed		April 15, 2021

3. DISCLAIMER

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