## CONSULTATION ON POTENTIAL CHANGES TO THE MSCI GLOBAL ENVIRONMENT INDEX METHODOLOGY

February 2017

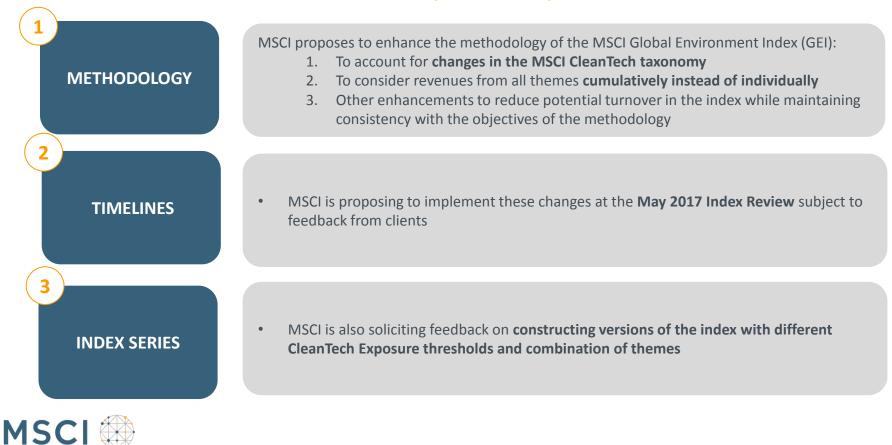
This consultation may or may not lead to changes to the MSCI Global Environment Index



## **OBJECTIVES OF THE CONSULTATION**

#### MSCI is conducting a client consultation in order to get feedback on three main issues.

#### **Key Feedback Required**



# CURRENT INDEX METHODOLOGY



#### MSCI GLOBAL ENVIRONMENT INDEX – CURRENT METHODOLOGY

The MSCI Global Environment Index aims to serve as a benchmark for investors seeking exposure to companies whose primary source of revenues is derived from environmentally beneficial products and services.

PARAMETERS	CURRENT GLOBAL ENVIRONMENT INDEX
PARENT INDEX	MSCI ACWI IMI
ELIGIBILITY RULES	<ul> <li>All securities with 50% or more revenue from one of the following environmental theme:</li> <li>1. Alternative Energy</li> <li>2. Clean Tech</li> <li>3. Green Building</li> <li>4. Sustainable Water</li> <li>5. Pollution Prevention</li> </ul>
SECURITY SELECTION	All qualifying securities
REBALANCING FREQUENCY	Quarterly, coinciding with the rebalancing of the Parent Index
WEIGHTING SCHEME	Market Cap Weighted



# METHODOLOGY ENHANCEMENT PROPOSALS



There has been growing interest from institutional investors worldwide on climate change over the past three years.

MSCI ESG Research revisited its CleanTech (CT) taxonomy to reflect the latest consensus among stakeholders on the definition of clean technologies.

MSCI proposes to reflect the following changes in the CleanTech taxonomy in the MSCI GEI:

- **Rename** the "CleanTech" category "Energy Efficiency"
- Remove technologies that did not achieve consensus during stakeholders' consultations (e.g., natural gas)
- Add new technologies (e.g., sustainable transport)

MSC

**Move** technologies to more relevant categories (e.g., LED)



FROM MSCI ESG RESEARCH INC

MSCI ESG



MSCI



system that distinguishes between different levels of the value chain (e.g. infrastructure, products / component enabling services). The organization responsible for clean technology development within a company is a key indicator to assess overarching strategy

#### ENHANCEMENT PROPOSAL – CHANGE IN TAXONOMY (2/2)

THEMES	5	TECHNOLOGIES	
1	ALTERNATIVE ENERGY	Wind Solar Geothermal Biomass Waste Energy	Wave Tidal Small Hydro (15 MW threshold) Biogas Biofuels (first & second generation) <i>Natural Gas</i>
	ENERGY EFFICIENCY (previously CleanTech)	Demand-Side Management Battery Fuel Cells / Hydrogen Systems Smart Grid Other Energy Storage Superconductors Natural Gas Combined Heat & Power <i>Clean Transport infrastructure</i>	Nanotech Household products Advanced materials Energy Efficient Materials Hybrid / Electric Vehicles Industrial Automation IT Optimization Services & Infrastructure
	POLLUTION PREVENTION & CONTROL	Waste Treatment Reuse & Recycling of Waste Low Toxicity / VOC	Conventional Pollution Control Rainwater Harvesting Environmental Remediation
<del>Ч</del>	SUSTAINABLE WATER	Water Infrastructure & Distribution Smart Metering Devices Drought-resistant seeds	Desalinization Water recycling equipment & services Waste Water Treatment
Ø	GREEN BUILDING	Green Certified Properties	Insulation LED Lighting Compact Fluorescent Lighting

Natural Gas: technology removed from the taxonomy Clean Transport infrastructure : category added to the taxonomy

**MSCI** 

Energy Efficiency: theme renamed 7 Insulation: moved to Energy Efficiency Theme

#### ENHANCEMENT PROPOSAL – CUMULATIVE THEME BASED REVENUE

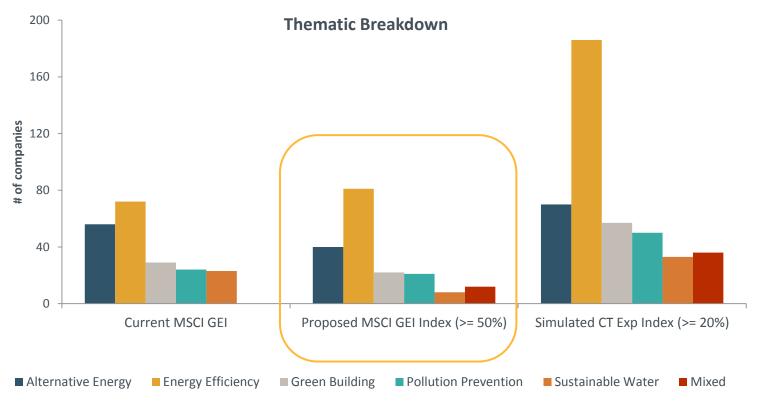
- Currently, companies are eligible to be included in the MSCI GEI if they generate 50% or more revenue from one of the five environmental themes
- For example, Qatar Electric & Water Co derived a total 74% of revenues from all themes (i.e. 44% from Sustainable Water and 30% from the Energy Efficiency), but is not eligible for inclusion in the MSCI GEI under the current index methodology



**Cumulative revenue:** MSCI proposes to use cumulative CleanTech (CT) exposure across different themes so that securities are eligible to be included in the index as long as the total CleanTech Exposure adds to >=50%



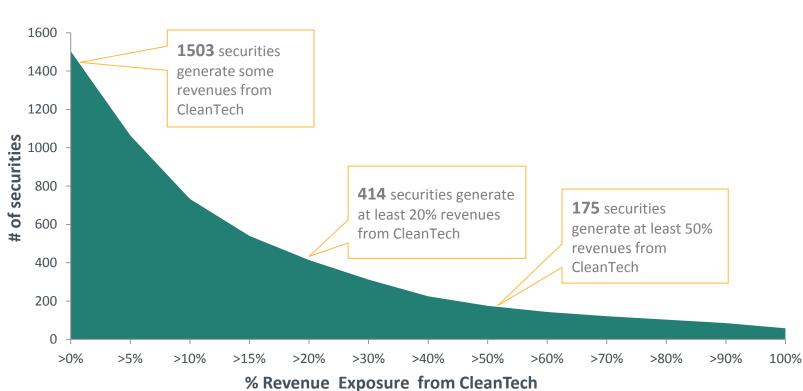
MSCI proposes to have all five environmental themes cumulative which leads to 12 companies being eligible due to their involvement in more than one theme





#### DISTRIBUTION OF CLEANTECH EXPOSURE IN MSCI ACWI IMI

7141 (83%) securities out of 8644 securities in MSCI ACWI IMI have no CleanTech Exposure as of December 1, 2016



CleanTech revenue % in MSCI ACWI IMI



## MSCI GEI – ADDITIONAL PROPOSALS

To reduce potential turnover while maintaining consistency with index objectives, MSCI proposes the following additional changes to the methodology

**Buffer:** MSCI proposes to introduce a buffer (CleanTech exposure between 40% and 50%) for existing constituents of the Index to reduce turnover

 There were 52 companies with CleanTech Exposure between 40% and 50% as of December 1, 2016

**Ageing Rule :** MSCI proposes to use an ageing rule for securities which remain in the buffer zone (CT Exposure between 40% and 50%)

- If a security remains in the buffer zone for two consecutive years, it would be deleted at the subsequent Index Review
- E.g., if a security gets in the buffer zone at the May 2017 Index Review, it would be evaluated at the May 2018 Index Review and May 2019 Index Review
- It would be deleted at May 2019 Index Review if it was in the buffer zone at both May 2018 and May 2019 Index Review

**Transition:** Additionally, MSCI proposes to transition the current MSCI GEI Index to the proposed MSCI GEI Index over a period of 2 quarterly index reviews in the light of high expected turnover

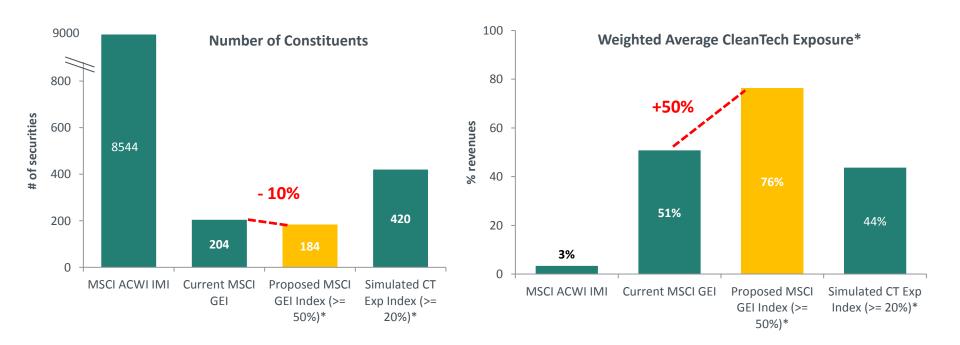


## MSCI GEI – ADDITIONAL ANALYSIS ON TRANSITION

- MSCI simulated the transition of a portfolio tracking the current MSCI GEI to the proposed MSCI GEI at the November 2016 Index Review under the following assumptions
  - Fund Size used: 200 million USD
  - Maximum daily trading limit of 20%
- Days to trade to complete the transition from a portfolio tracking the current MSCI GEI to a portfolio tracking the potential MSCI GEI = 3.6 days
- Similarly, days to trade to create a portfolio tracking the proposed MSCI GEI under the same assumptions = 4.9 days



In the proposed MSCI GEI Index, the CleanTech exposure increases by 50% while the number of constituents reduces by 10% as compared to the current MSCI GEI



\*Index level Weighted Average CleanTech (CT) Exposure is calculated by taking a weighted average of index constituent weight and their total CleanTech Exposure.



# **DISCUSSION QUESTIONS**



#### MSCI GEI – ENHANCEMENT PROPOSALS SUMMARY

PARAMETERS	CURRENT GLOBAL ENVIRONMENT INDEX	PROPOSED MSCI GLOBAL ENVIRONMENT INDEX
PARENT INDEX	MSCI ACWI IMI	
CLEANTECH EXPOSURE	CleanTech Revenue/ Total Revenue	
CLEANTECH THEMES	<ul> <li>Old definitions of</li> <li>Alternative Energy</li> <li>Clean Tech</li> <li>Green Building</li> <li>Sustainable Water</li> <li>Pollution Prevention</li> </ul>	<ul> <li>New definitions of</li> <li>Alternative Energy</li> <li>Energy Efficiency</li> <li>Green Building</li> <li>Sustainable Water</li> <li>Pollution Prevention</li> </ul>
ELIGIBILITY RULES	All securities with an exposure >= 50% to an individual theme	Non constituents eligible to be included only if the Total CleanTech Revenue Exposure >= 50% (>= 40% for existing index constituents)
SECURITY SELECTION	All qualifying securities	
AGEING RULE	No ageing rule	Securities to be deleted from the Index if they stay in the buffer zone for 2 consecutive years
TRANSITION PROPOSAL	NA	Transition over the next 2 Quarterly Index Reviews
<b>REBALANCING FREQUENCY</b>	Quarterly, coinciding with the rebalancing of t	he Parent Index
WEIGHTING SCHEME	Market Cap Weighted	

**Note:** These proposed changes (except the proposal to use total CleanTech Exposure) would also be reflected in the 5 individual thematic indexes



## DISCUSSION QUESTIONS (1/2)

- Do you agree with MSCI proposal to use revenues from *all five themes cumulatively*?
- In light of the high expected turnover from the proposed enhancement, MSCI proposes that the *transition be phased over 2 quarterly index reviews* 
  - Are 2 quarterly index reviews enough for the proposed transition?
- MSCI also proposes to introduce an *ageing rule* for securities in the buffer zone
   Are 2 years enough ageing period for securities which remain in the buffer zone?
- Is there interest in any *alternative weighting schemes* other than market cap weighting?



## DISCUSSION QUESTIONS (2/2)

- Should MSCI also exclude companies which are facing very severe ESG controversies (49 companies in ACWI IMI, 2.4% of ACWI weight) or which have involvement in Controversial Weapons (7 companies in MSCI ACWI IMI, 0.5% by weight)?
- Apart from the MSCI Global Environment Index and the individual thematic indexes, would a combination of 2 or more themes be useful?
  - Natural Capital: Combination of Sustainable Water and Pollution Prevention
  - *Climate Change:* Alternative Energy + Energy Efficiency + Green Building
- Is there any interest in versions of the index with *different thresholds for CleanTech Revenue Exposure* for clients who may want a broader/narrower Environmental Index?
  - E.g. an index which selects securities which have >= 20% CleanTech Exposure (lower threshold so that the resulting index has higher number of constituents)
- Do you have any feedback on the *MSCI ESG Research CleanTech taxonomy*?



# **APPENDIX**



### **PROPOSED INDEX CHARACTERISTICS**

Characteristics	MSCI ACWI IMI	Current MSCI GEI	Proposed MSCI GEI Index (CT Exp >= 50%)*	Simulated CT Exp >= 20% Index*
Number of Securities	8644	204	184	420
Deletions	-	-	77	46
Additions	-	-	57	262
Max Active Country Weight	-	10.2%	11.2%	6.9%
Max Active Sector Weight	-	42.1%	24.3%	24.0%
Turnover from existing GEI Index	-	-	45.9%	71.2%

\* As simulated on Dec 1, 2016

#### **Thematic Exposure**

Theme	Current MSCI GEI	Proposed MSCI GEI Index (CT Exp >= 50%)	Simulated CT Exp >= 20% Index
Alternative Energy	56	40	70
Energy Efficiency	72	81	186
Green Building	29	22	57
Pollution Prevention	24	21	50
Sustainable Water	23	8	33
Mixed	-	12	36

- The selection of securities in the Proposed MSCI Global Environment Index would be based on the cumulative CleanTech Exposure
  - There may be securities which may be a part of the MSCI GEI but not a part of the individual thematic index
  - For example, there are 12 securities in the Proposed MSCI GEI which would not be a part of the individual thematic index



Key Metrics				
	MSCI ACWI IMI Index	Proposed MSCI GEI Index (CT Exp >= 50%) Index	Simulated (CT Exp >= 20%) Index	MSCI Global Environment Index
Total Return* (%)	4.3	3.7	5.4	0.1
Total Risk (%)	11.1	13.0	12.7	13.6
Return/Risk	0.39	0.28	0.42	0.01
Sharpe Ratio	0.36	0.26	0.40	-0.01
Active Return (%)	0.0	-0.6	1.1	-4.2
Tracking Error (%)	0.0	4.6	3.9	4.9
Information Ratio	NaN	-0.13	0.28	-0.84
Historical Beta	1.00	1.11	1.09	1.15
No of Stocks ***	8582	181	414	203
Turnover** (%)	2.1	2.2	1.5	18.6
Price To Book***	2.0	2.2	2.2	2.0
Price to Earnings ***	18.9	24.8	21.3	23.6
Dividend Yield*** (%)	2.4	2.2	2.2	2.4

Period: 29-Nov-2013 to 30-Dec-2016

\* Gross returns annualized in USD

\*\* Annualized one-way index turnover over index reviews

\*\*\* Monthly averages

The definitions of all statistical parameters are available in the Appendix

Proposed MSCI GEI Index (CT Exp >=50%) Index and Simulated CT Exp >= 20% Index show the simulated performance of a basket of securities selected on December 1, 2016 in the period between Nov 29, 2013 – Dec 30, 2016



### ESG CHARACTERISTICS

ESG Metrics				
	MSCI ACWI IMI Index	Proposed MSCI GEI Index (CT Exp >= 50%) Index	Simulated (CT Exp >= 20%) Index	MSCI Global Environment Index
Integration				
Key Integration Metrics				
ESG Score	5.2	6.8	6.6	6.3
ESG Leaders (AAA-AA) (%)	18.5	40.3	36.5	31.4
ESG Laggards (B-CCC) (%)	17.0	4.7	8.2	9.9
ESG Trend Positive (%)	18.9	18.2	23.3	16.9
ESG Trend Negative (%)	9.5	3.5	6.6	2.5
ESG Pillars				
Environmental Score	5.3	6.7	6.5	6.3
Social Score	4.3	4.2	4.7	4.4
Governance Score	4.9	6.2	5.3	6.0
Key Governance Metrics				
Lack of Independent Board Majority (%)	15.1	21.5	17.7	18.7
Deviation from One Share One Vote (%)	21.7	15.6	12.0	18.5
No Female Directors (%)	10.9	13.1	12.3	7.4
Values				
Tobacco Producers (%)	1.3	0.0	0.0	0.0
Ties to Controversial and Nuclear Weapons (%)	2.7	0.0	0.0	0.0
Global Compact Compliance Violation or Watch List (%)	10.5	0.8	2.9	3.7
Red Flag Controversies (%)	3.0	0.0	0.0	0.3
Orange Flag Controversies (%)	21.9	0.8	4.1	3.9

As Of 30-Dec-2016

The definitions of all statistical parameters are available in the Appendix



### CARBON METRICS

Carbon Exposure				
	MSCI ACWI IMI Index	Proposed MSCI GEI Index (CT Exp >= 50%) Index	Simulated (CT Exp >= 20%) Index	MSCI Global Environment Index
Carbon Emissions (t CO2e/\$M Invested)	179	94	153	445
Carbon Intensity (t CO2e/\$M Sales)	248	166	230	534
Wtd Avg Carbon Intensity (t CO2e/\$M Sales)	219	145	186	330
Potential Carbon Emissions (t CO2e/\$M Invested)	3490	499	737	7326
Coal Reserves (%)	1.2	0.3	0.2	2.1
Fossil Fuel Reserves (%)	8.1	0.3	0.2	7.5

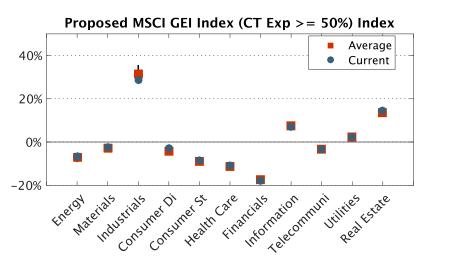
As Of 30-Dec-2016

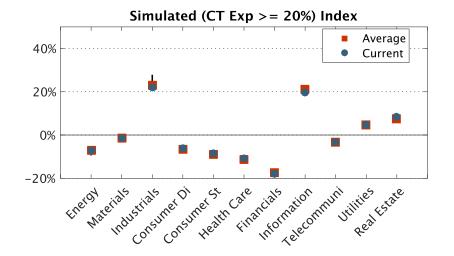
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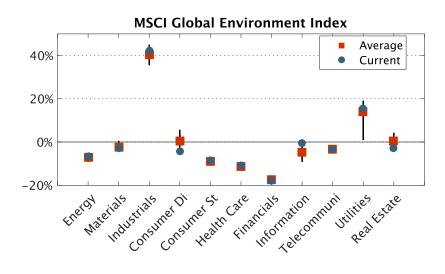
There is a significant reduction in the Potential Carbon Emissions of the Proposed MSCI GEI and the Simulated Index with CT Exposure >= 20%, as compared to the current MSCI GEI, because Natural Gas is no longer considered a part of the Alternative Energy theme in the new MSCI ESG Research CleanTech taxonomy



#### **PROPOSED INDEX CHARACTERISTICS – ACTIVE SECTOR WEIGHTS**

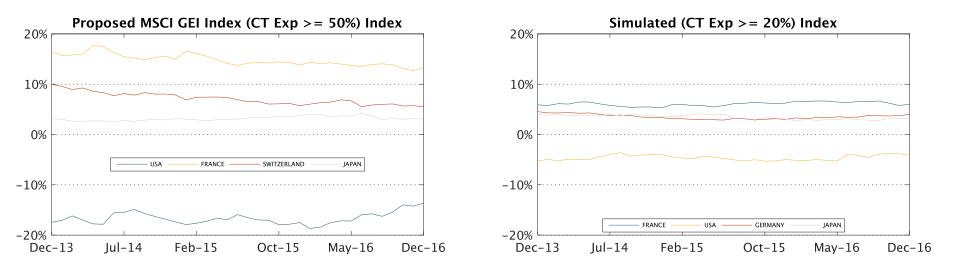


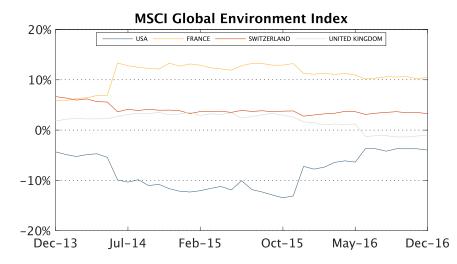






#### PROPOSED INDEX CHARACTERISTICS – ACTIVE COUNTRY WEIGHTS







## TOP CONSTITUENTS

Security Name	Sector	Country	Total Clean Tech Exposure	Current GEI Weight	Proposed MSCI GEI (CT Exp >= 50%)	Simulated CT Exp >= 20% Index
INTEL CORP	ITECH	USA	29			1
ORACLE CORP	ITECH	USA	29			1
SIEMENS	INDUS	Germany	31			1
TESLA MOTORS	CONDISC	USA	100	3.7%	1	1
SCHNEIDER ELECTRIC	INDUS	France	52	5.7%	1	1
EAST JAPAN RAILWAY CO	INDUS	Japan	65	4.3%	1	1
ABB LTD	INDUS	Switzerland	48	5.8%	1	1
SALESFORCE.COM	ITECH	USA	36			1
UNIBAIL-RODAMCO	REAL	France	76		1	1
VESTAS WIND SYSTEMS	INDUS	Denmark	100	2.2%	1	1
SERVICENOW	ITECH	USA	100	2.1%	1	1
EMERSON ELECTRIC CO	INDUS	USA	37	5.5%		1
CITRIX SYSTEMS	ITECH	USA	100	2.1%	1	1
DIGITAL REALTY TRUST	REAL	USA	83		1	1
KONINKLIJKE PHILIPS	INDUS	Netherlands	43			1
AKAMAI TECHNOLOGIES	ITECH	USA	100	1.8%	1	1



#### PROPOSED INDEX CHARACTERISTICS – LARGEST DELETIONS FROM CURRENT MSCI GEI

#### Proposed MSCI GEI (CT Exp >= 50%)

		<b>.</b> .	Total Clean		ESG	Parent Index	Current GEI
Security Name	Sector	Country	Tech Exposure	ESG Rating	Controversies	Weight	Weight
EMERSON ELECTRIC CO	INDUS	USA	37	В	7	0.09%	5.5%
EATON CORP PLC	INDUS	USA	22	BBB	5	0.07%	4.6%
SAINT-GOBAIN	INDUS	France	10	AA	7	0.05%	3.3%
CENTRICA	UTIL	UK	11	A	1	0.04%	2.7%
ENGIE	UTIL	France	7	A	5	0.03%	2.2%
WASTE CONNECTIONS	INDUS	USA	0	BB	5	0.03%	2.0%
AMERICAN WATER WORKS CO	UTIL	USA	25	BBB	5	0.03%	2.0%
AGL ENERGY	UTIL	Australia	2	BBB	5	0.02%	1.6%
PENTAIR PLC	INDUS	USA	11	В	10	0.02%	1.5%
RED ELECTRICA CORP	UTIL	Spain	39	AAA	10	0.02%	1.2%



### CAPACITY & CONCENTRATION

Capacity & Concentration Metrics				
	MSCI ACWI IMI Index	Proposed MSCI GEI Index (CT Exp >= 50%) Index	Simulated (CT Exp >= 20%) Index	MSCI Global Environment Index
Concentration Metrics*				
Avg No of Stocks	8582	181	414	203
Effective No of Stocks	598	32	45	39
Market Cap Coverage (%)	99.7	1.2	4.3	1.6
Top 10 Sec Wt (%)	7.5	45.7	36.0	43.2
Size Family Exposures**				
Large (%)	71.3	39.7	54.6	43.8
Mid (%)	15.2	28.8	26.7	29.0
Small (%)	13.5	31.5	18.7	27.2
Micro (%)	0.0	0.0	0.0	0.0
Capacity of the Index***				
Stock Ownership (% of Float Market Cap)				
Average	0.02	1.97	0.54	1.52
Tail Average @ 95%	0.02	1.97	0.54	1.52
Maximum	0.02	1.97	0.54	1.52
Stock Ownership (% of Full Market Cap)				
Average	0.02	1.50	0.42	1.17
Tail Average @ 95%	0.02	1.97	0.54	1.52
Maximum	0.02	1.97	0.54	1.52
Degree of Index Tilt*				
Active Share (%)	0.0	98.5	95.5	98.1
Avg Weight Multiplier	1.0	86.5	23.5	63.3
Max Weight Multiplier	1.0	86.5	23.5	63.3
Max Strategy Weight (%)	1.5	9.5	8.7	6.9

\* Monthly average

\*\* M onthly average, size family data available from June 2008

\*\*\* Assuming a fund size of USD 10.0 bn as of the latest index review

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#### **Thematic Indexes**

Theme	Security Name	Sector	Country	Total Theme Exposure	Current Thematic Index Weight
Alternative Energy	SAINT-GOBAIN	INDUS	France	1	16.3%
Alternative Energy	ENGIE	UTIL	France	3	13.6%
Alternative Energy	CENTRICA	UTIL	UK	1	10.8%
Energy Efficiency	ABB LTD	INDUS	Switzerland	31	11.8%
Energy Efficiency	EMERSON ELECTRIC CO	INDUS	USA	34	11.2%
Energy Efficiency	EATON CORP PLC	INDUS	USA	15	9.4%
Sustainable Water	AMERICAN WATER WORKS CO	UTIL	USA	25	22.1%
Sustainable Water	PENTAIR PLC	INDUS	USA	11	16.9%
Sustainable Water	AQUA AMERICA	UTIL	USA	10	9.0%
Green Building	TAYLOR WIMPEY	CONDISC	UK	0	9.8%
Green Building	OWENS CORNING	INDUS	USA	0	9.6%
Green Building	LENNOX INTERNATIONAL	INDUS	USA	0	9.4%
Pollution Prevention	TESLA MOTORS	CONDISC	USA	0	29.9%
Pollution Prevention	WASTE CONNECTIONS	INDUS	USA	0	16.4%
Pollution Prevention	DONALDSON CO	INDUS	USA	20	6.3%



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