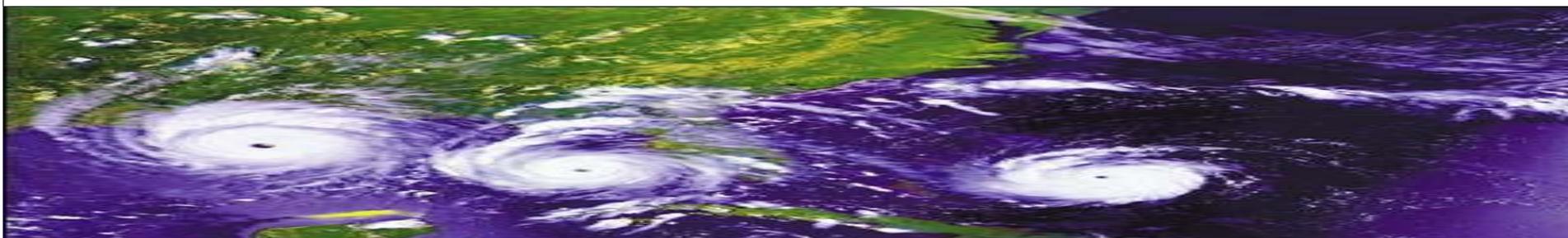


# Carbon Beta and Equity Performance: Understanding Climate Risks & Opportunities



19.86	37.52	17.12	-0.69	1.81%
38.75	17.02	42.15	+0.75	0.48%
17.47	40.86	27.09	+0.13	2.09%
42.45	26.07	22.47	+0.46	-5.12%
27.15	21.71	23.37	-1.26	3.30%
22.59	22.74	391.66	+12.51	0.78%
23.97	22.74	95.61	+0.74	1.69%
391.70	377.43	25.22	+0.42	1.22%
95.67	93.96	24.82	+0.30	
25.32	24.74	57.27		
24.89	24.35			
57.55	55.00			

March 2009

**Innovest**  
STRATEGIC VALUE ADVISORS

Innovest is now a member of the RiskMetrics Group



# Climate Change is Driving a Global Industrial Restructuring



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*“There will be a large creation and re-distribution of shareholder value in the transition to a low carbon economy – there will be winners and losers at sector level, and within sectors at company level.*

*The winners are more likely to be those businesses that take the time to understand and address this complex area.”*

Tom Delay, Chief Executive, The Carbon Trust  
“Climate Change and Shareholder Value” Report

# Climate Change: The Logic for Investors

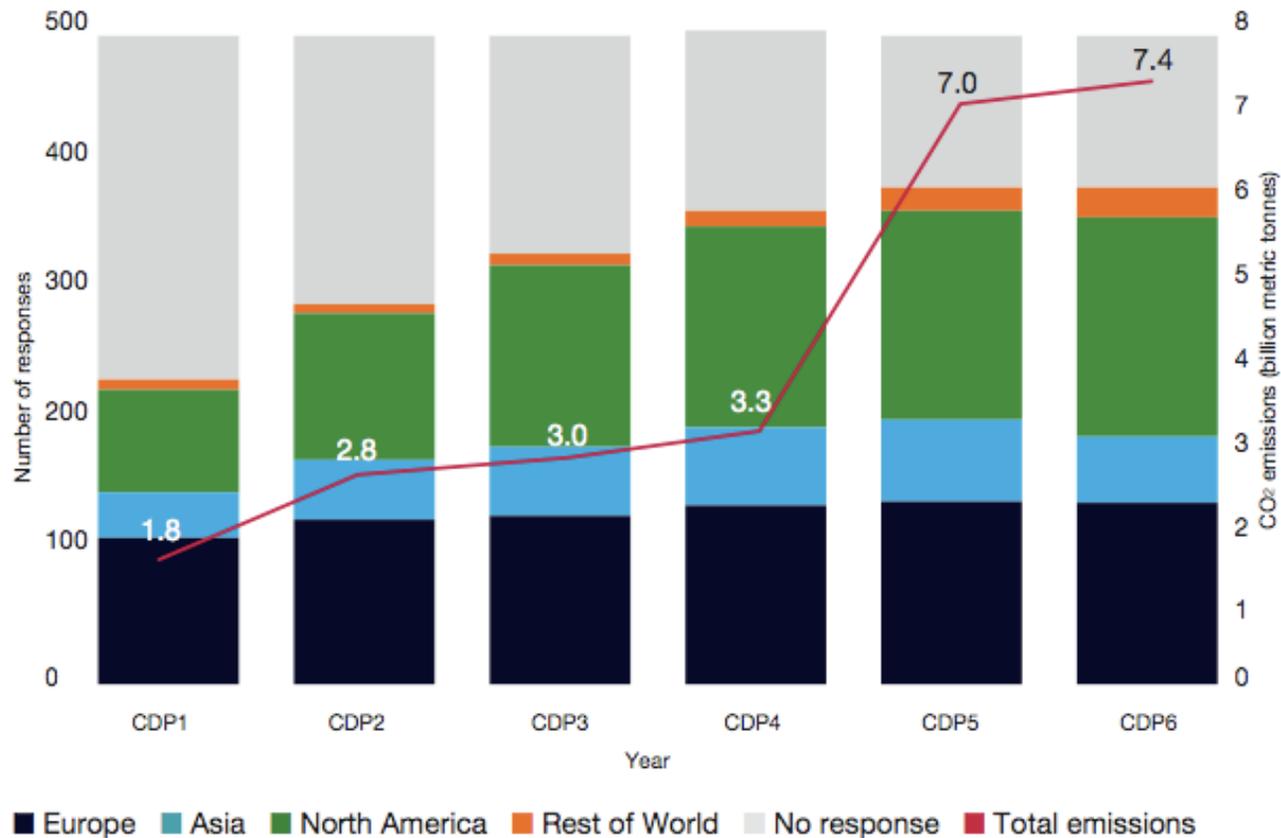
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- Companies' "climate" characteristics are becoming increasingly critical to their competitiveness, profitability, and share price performance.
- Climate change is emerging as the #1 global sustainability risk driver
- Climate risk exposure varies widely, between and even within industry sectors; yet those exposures are *not* fully priced into asset values.
- *Combining* traditional financial analysis with carbon risk research creates optimal portfolio performance.

# Status of Climate Disclosure: FT 500



**Fig. 1: CDP1-CDP6 respondents by geography**

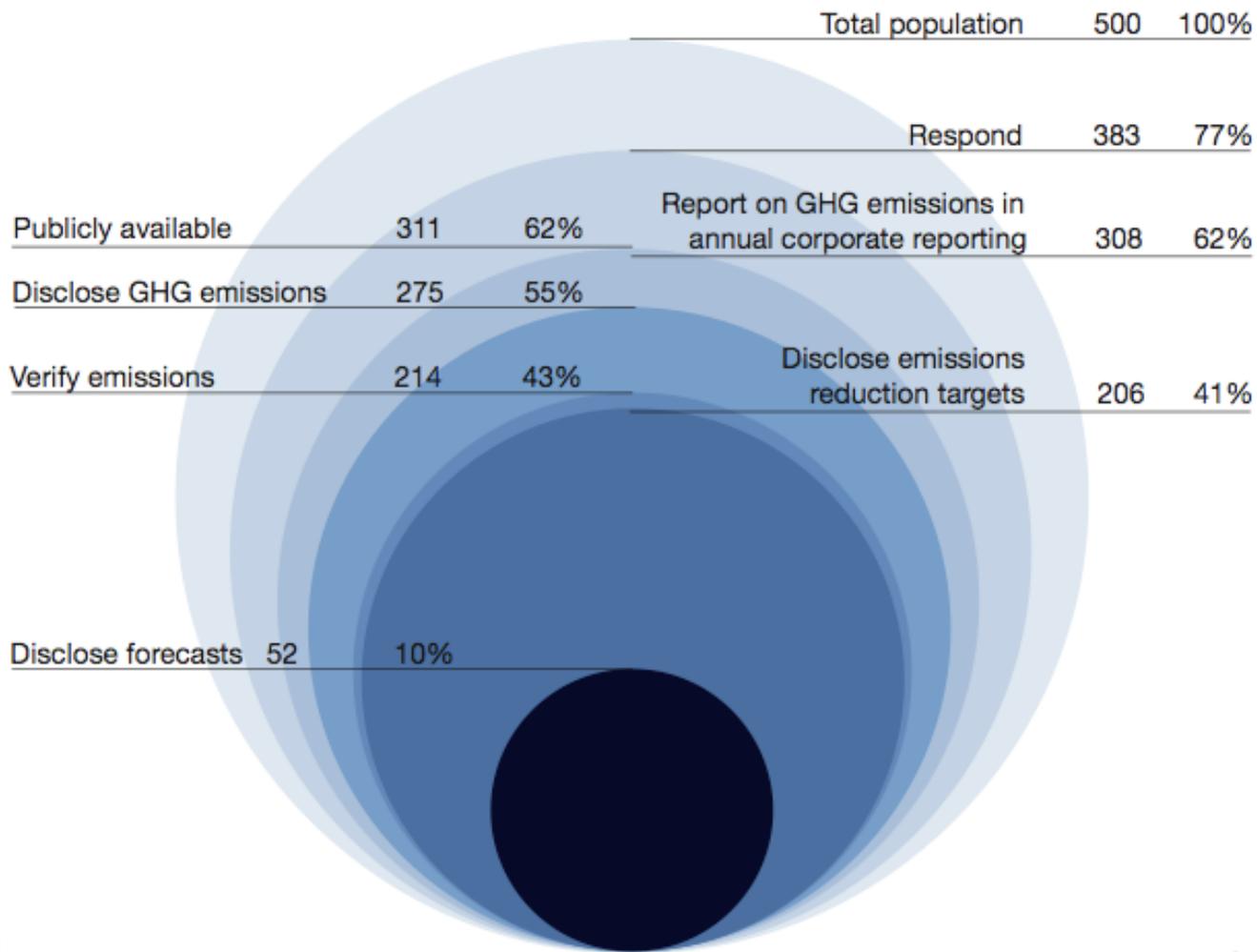


Source: Carbon Disclosure Project

# Carbon Disclosure Project FT500 - 2008



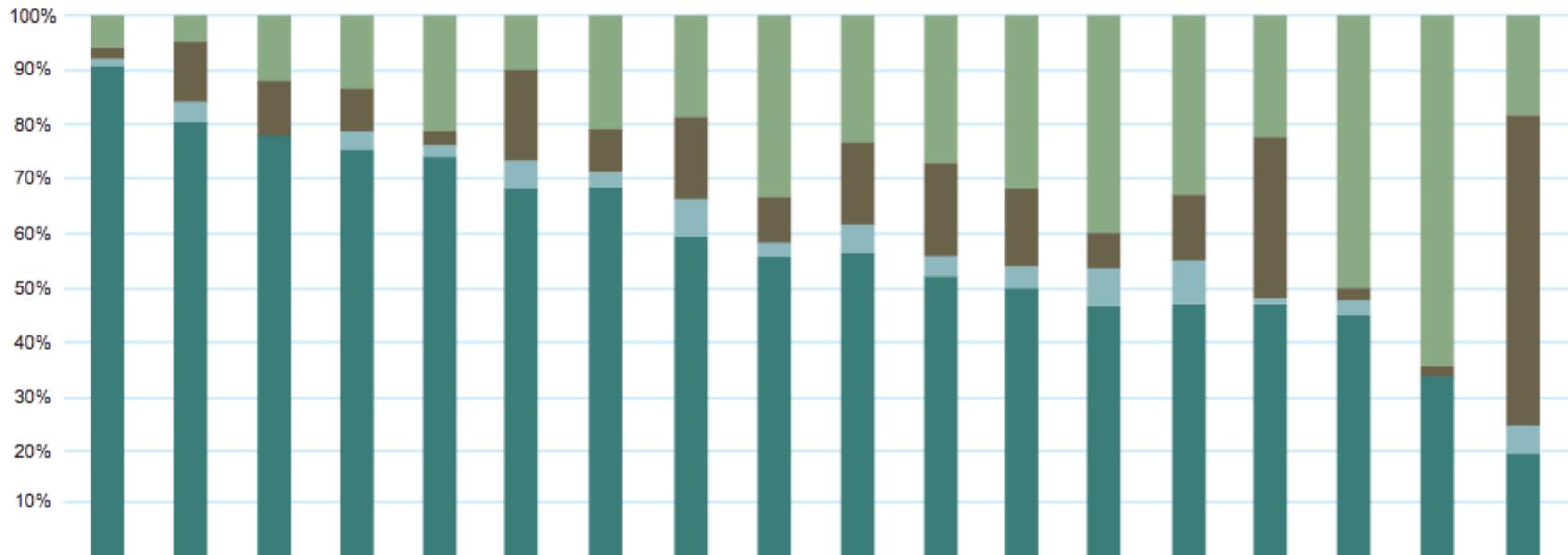
**Fig. 2: Proportion of Global 500 at each disclosure level**





# CDP5 (2007) Responses by Region

CDP5 Response by Region / Sector

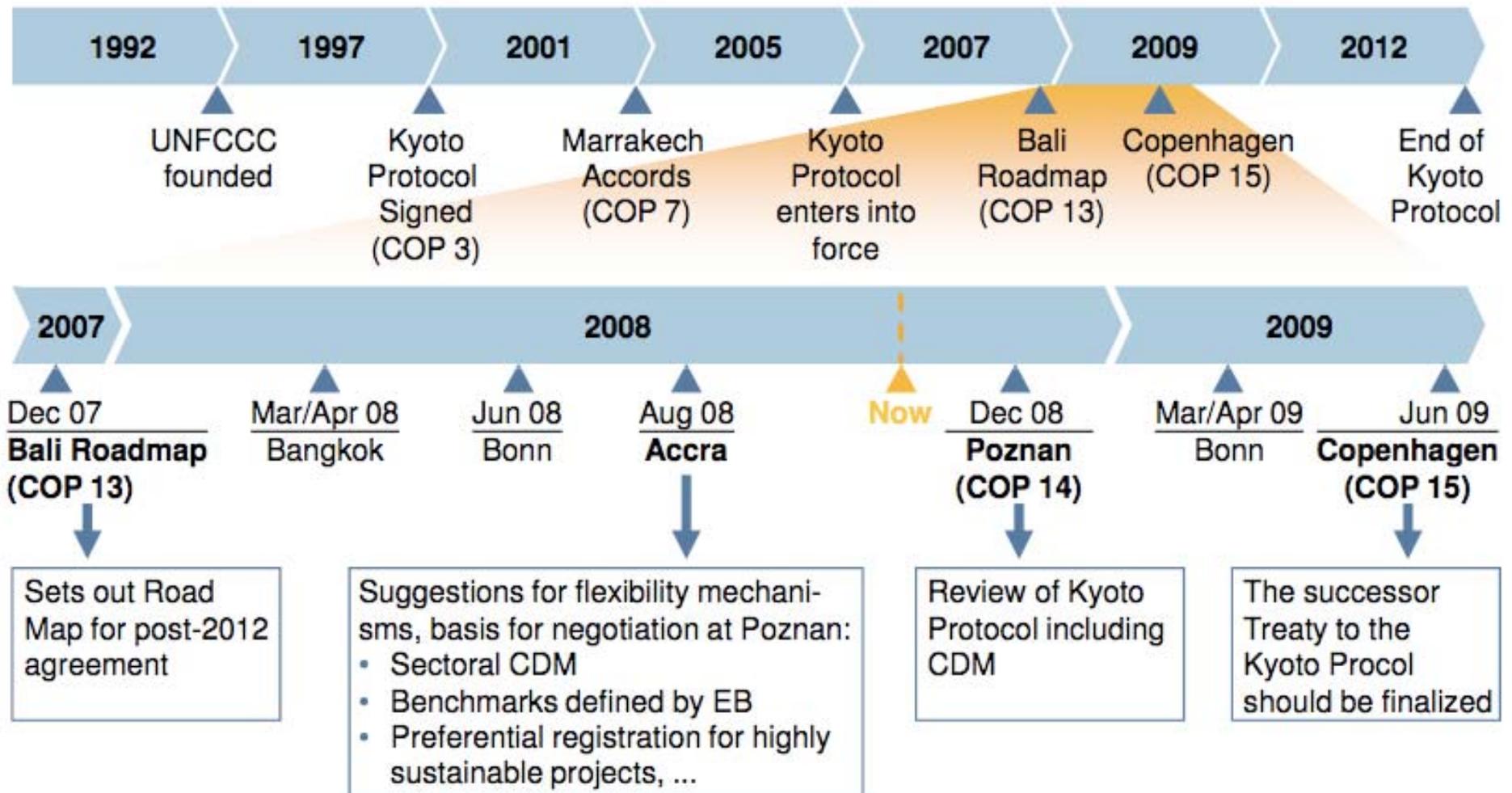


Sample (number of companies)	FTSE 100 (100)	Brazil 60 (57)	Switzer- land 50 (50)	Global FT500 (500)	Japan 150 (151)	Nordic 125 (125)	South Africa 40 (38)	UK FTSE 250 (250)	France 120 (120)	USA S&P 500 (500)	Germany 200 (200)	Aust/NZ 150 (141)	Electric Utility (240)	Transport 100 (100)	Canada 200 (194)	Italy 40 (40)	India 110 (110)	Asia 80 (77)
No Response	6	2	6	62	32	12	8	47	40	117	54	45	95	33	43	20	70	14
Declined to Participate	2	7	5	39	4	21	3	37	10	76	35	20	16	12	58	1	2	44
Provided Information	1	1	0	16	3	6	1	18	3	25	7	6	16	8	2	1	0	4
Answered Questionnaire	91	47	39	383	112	84	26	148	67	282	104	70	113	47	91	18	38	15
% Answered Questionnaire	91	82	78	77	74	68	68	59	56	56	52	50	47	47	47	45	35	19

# Regulatory Developments on the Road to Copenhagen



RiskMetrics Group





# Countdown to Copenhagen

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Countries are expected to:

- Agree a shared long-term vision (ideally a global emission reduction target of at least 50% by 2050 relative to 1990 levels);
- Set mid-term emission reductions for individual developed countries (ideally to 2020);
- Develop international financing mechanisms to support emission reduction and adaptation programs in developing countries;
- Resolve the problem of tropical deforestation; and
- Address a range of other cross-cutting issues such as technology transfer and capacity building.

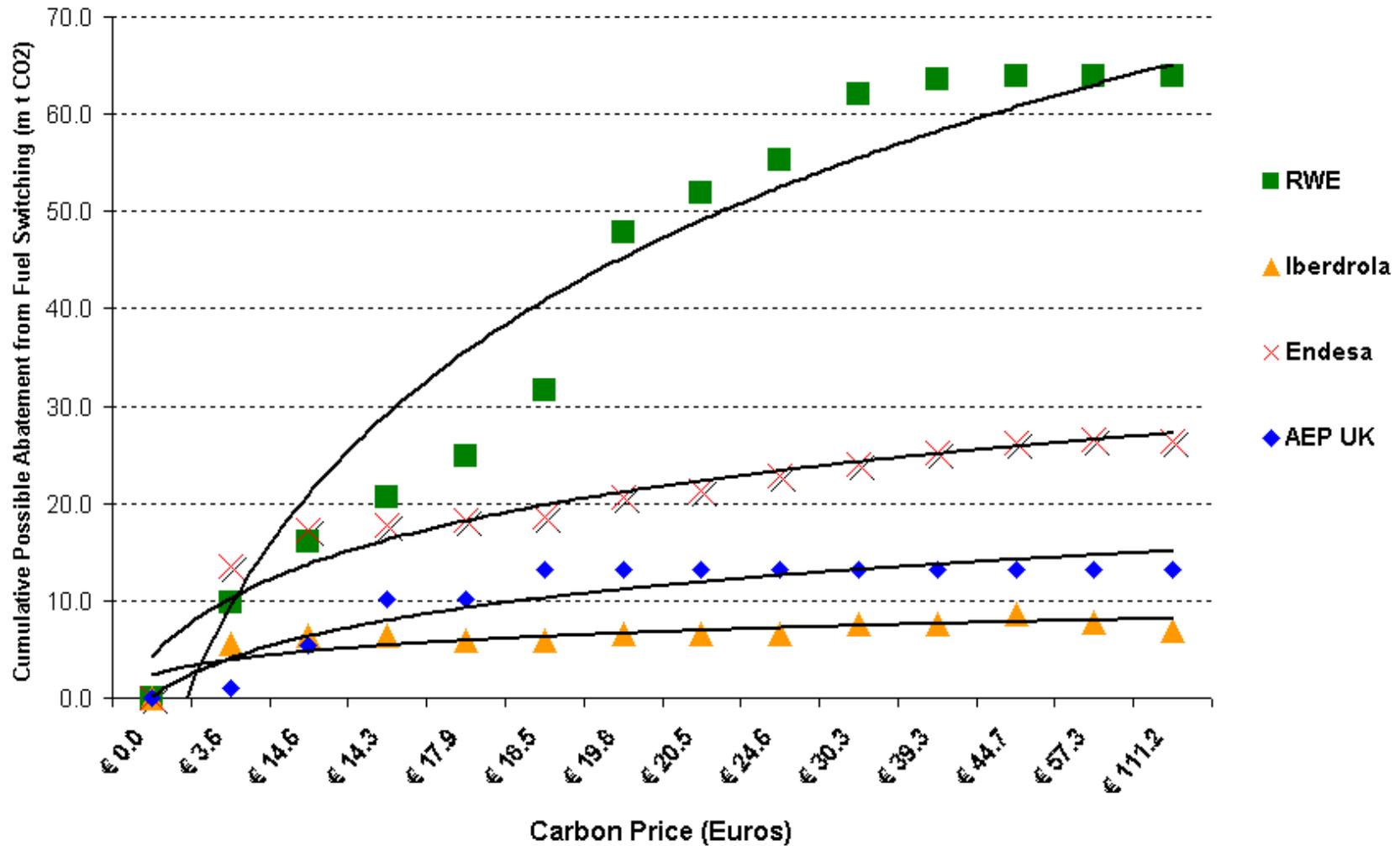
Two critical factors: US position and financial & economic crisis resolution

# What does it mean for Corporations?



- Companies need to develop climate change risk strategies
  - Policymakers require it
  - Shareholders are asking for it
  - Society expects it
- Company Carbon Impacts May Be Substantial (Good or Bad)
- Significant Differentials in Company 'Exposure'
- Energy Markets Will Be Disrupted
- Financial Institutions Have Strong Strategic Stake
- 'Mega Trends' Are Forcing The Agenda
  - Energy security
  - Scientific resolution
  - Energy demand

# Marginal Abatement Supply Curves Dictate Company Options





# What Have We Learned So Far?

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- The global industrial restructuring towards a “low carbon” future has already begun
- Risks are much more broadly –and unevenly— distributed than previously thought
- While more & more investors and corporates are now paying attention, most are a long way from integrating the net climate exposure of their assets into actual investment strategies
- Investors can make money from climate change – and some are already doing so!

# What are the Investment Risks?

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- Physical
- Litigation
- Regulatory
- Competitive
- Reputational



**Each of these can affect:**

- **CAPEX**
- **Operating Costs**
- **Cash Flow**
- **Cost of Capital**

# Carbon Beta™ analytics platform

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- The Carbon Beta™ research platform identifies companies that are better positioned to benefit from carbon restricted regimes, with the potential to generate additional alpha.
- Identifies and quantifies carbon risk exposures on both a company-specific and portfolio wide basis

# Carbon Beta™ analytics platform *(cont'd)*



- Unique carbon-profiling database with a coverage of over 2,000 companies around the world
  - *Carbon emissions* of high carbon intensity publicly-held companies
  - Estimated *compliance costs* based on where the carbon intensive companies operate and the relevant regulatory regimes
  - *Analysis and rating* of company risks, management, performance trend and opportunity in terms of carbon

# Carbon risk and performance: **Company Specific Carbon Analysis**

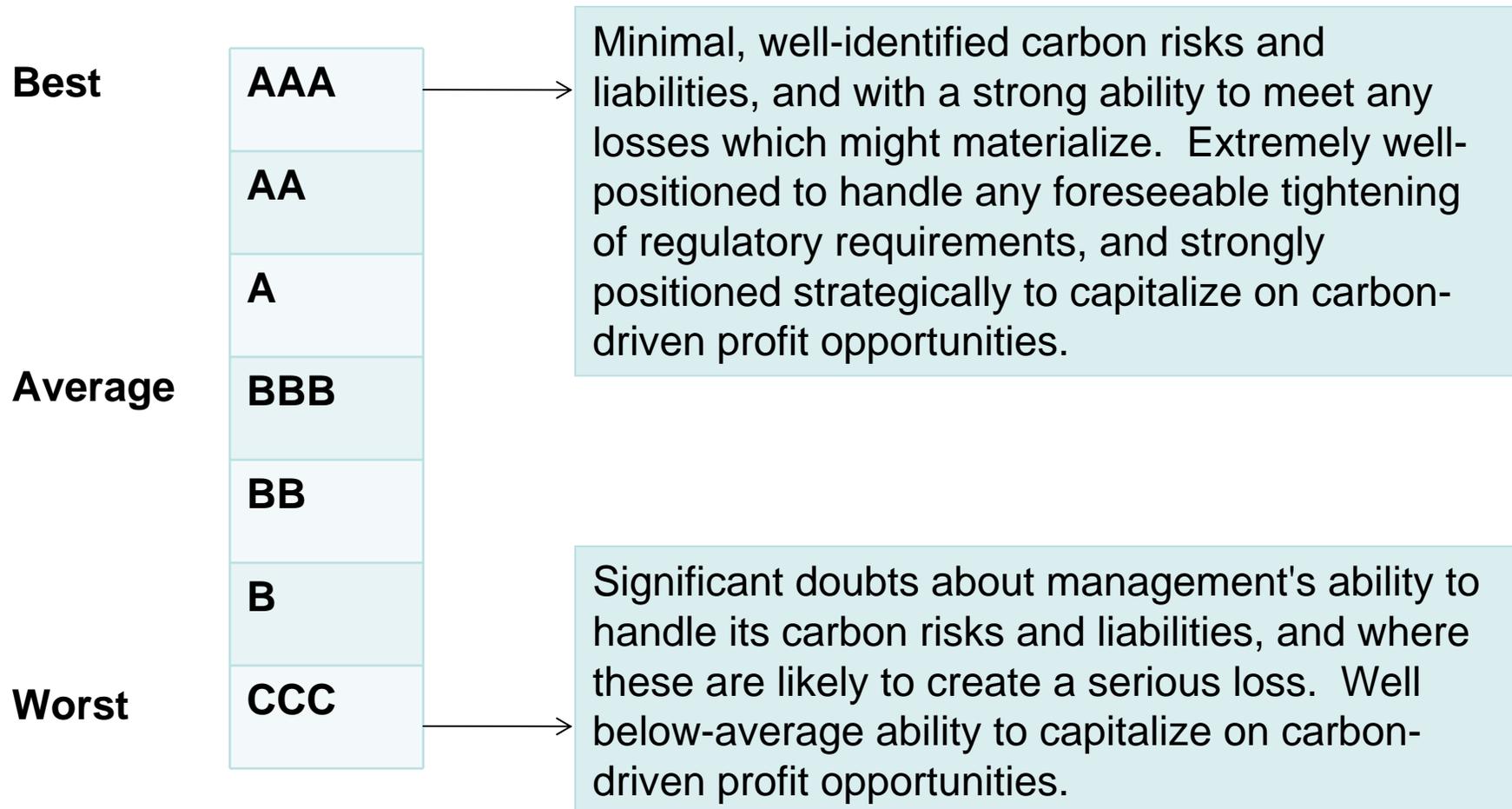
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Climate risk has four dimensions, not one

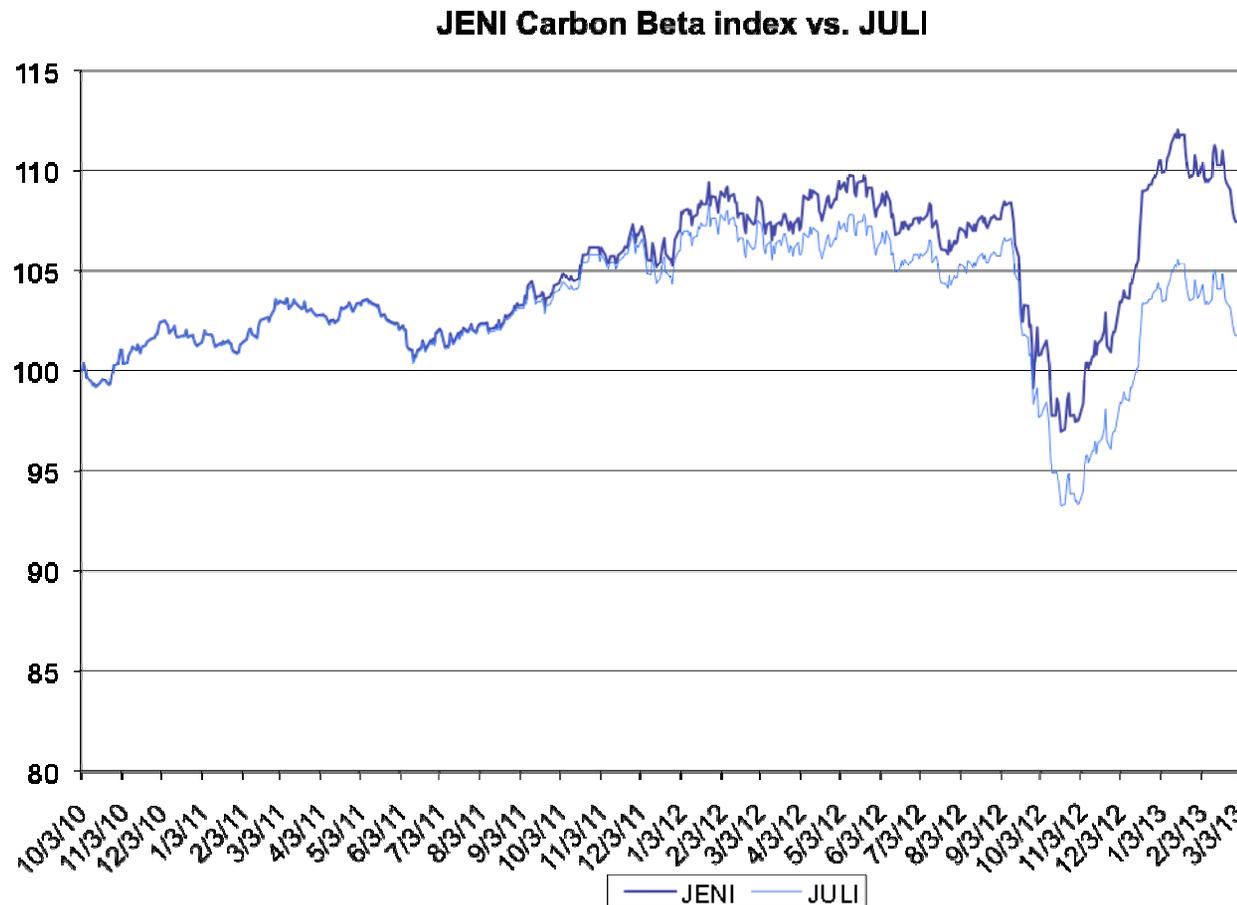
- Scores
1. Carbon Management Strategy
  2. Carbon Risk Exposure
  3. Strategic Carbon Profit Opportunities
  4. Improvement Trend

**Carbon Beta™ rating**

# Carbon Beta™ Ratings



# Application to Corporate Bonds Introducing the JENI-Carbon Beta Index



Source: Innovest research



**JENI-Carbon Beta vs. JULI (spreads over benchmark Treasuries) 530 bps outperformance since Oct. 2006**

# Carbon risk and performance: Industry Sector Exposures

- Carbon Direct Intensity
- Carbon Indirect Intensity
- Carbon Market Sensitivity
- Carbon Combined Intensity

GICS code	Sectors	Carbon direct intensity (inhouse)	Carbon indirect intensity (upstream)	Carbon market sensitivity (downstream)	Carbon combined intensity
551010	Electric Utilities	5.0	5.0	5.0	5.0
151040	Metals & Mining	5.0	5.0	3.0	4.4
40xx10	Insurance, Banks & Diversified Financials	0.0	2.0	5.0	1.7

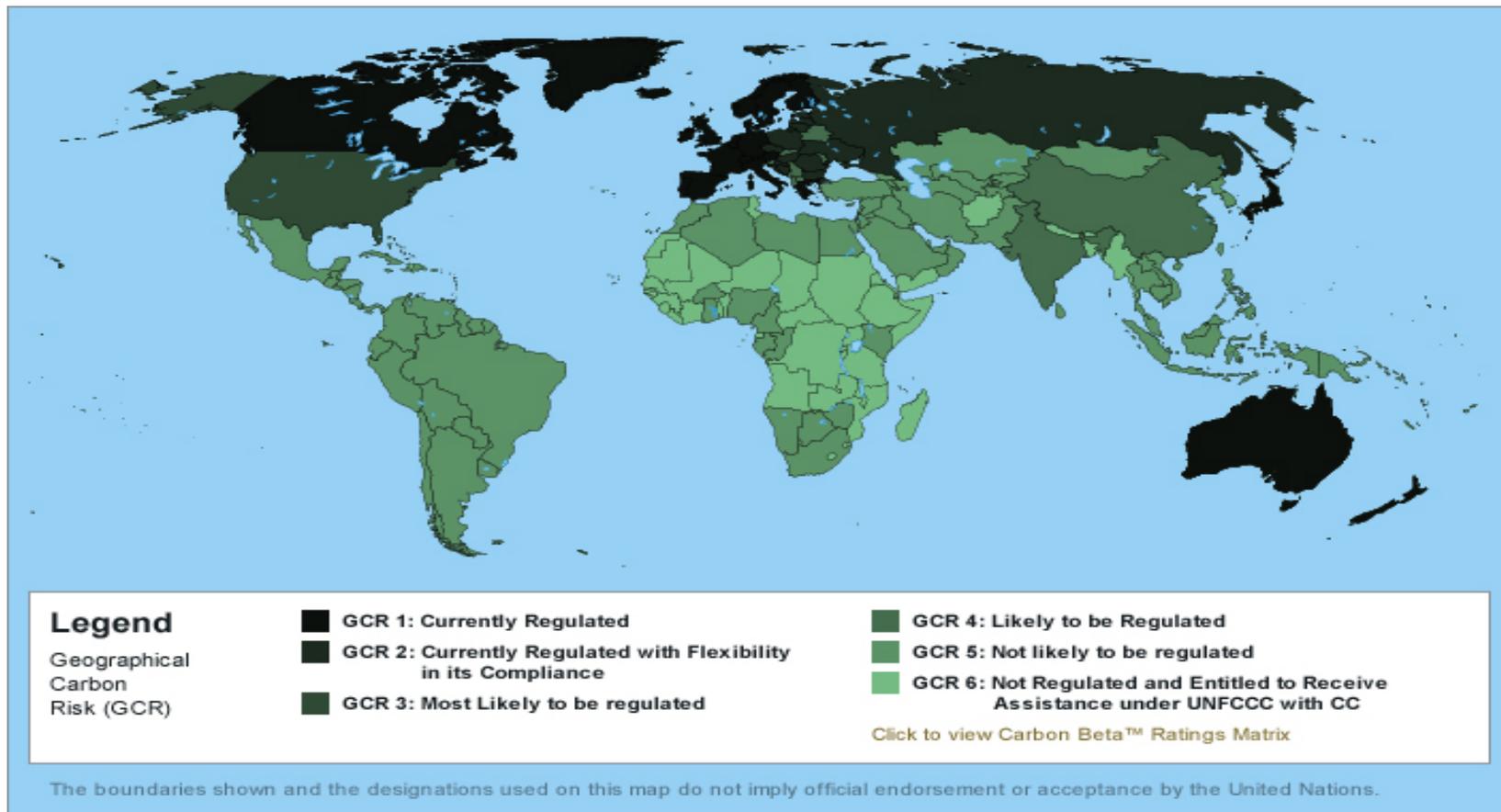
Source: Innovest research

*Scale (0-min, 5-max)*

# Carbon risk and performance: Carbon Financials



## Weighted Average Country Carbon Reduction Target (WACCRT™)



# Carbon Financials

## Carbon Beta™

Company Rating	A
Carbon Improvement Vector:	▲

## Carbon Scores

Carbon Management Strategy:	10
Carbon Risk Exposure:	3.5
Carbon Strategic Opportunities:	9
Carbon Performance Improvement:	9

## Industry Carbon Combined Intensity

Carbon Combined Intensity <sup>(a)</sup>	4
Carbon Direct Intensity:	5
Carbon Indirect Intensity:	5
Carbon Market Sensitivity:	3
Sales (USD millions):	\$22,959
Market Cap. (USD Million):	\$19,403

## Carbon Competitive Set

ALCAN INC

## Compliance Costs

WACCRT™ <sup>(c)</sup>	-16.5%		
Industry Discount Rate <sup>(d)</sup>	9.2%		
	Exp. Case	Min. Case	Max. Case
Carbon Price (\$/t CO2e)	\$28	\$18	\$45
Annual Cost of Compliance (\$1000)	\$312,538	\$190,522	\$501,579
Exposure (% of EBITDA)	17.2%	10.5%	27.7%
NPV of Abatement Costs (\$1000)	\$1,315,420	\$835,176	\$2,112,022
Exposure (% of Mkt. Cap.)	6.8%	4.3%	10.9%

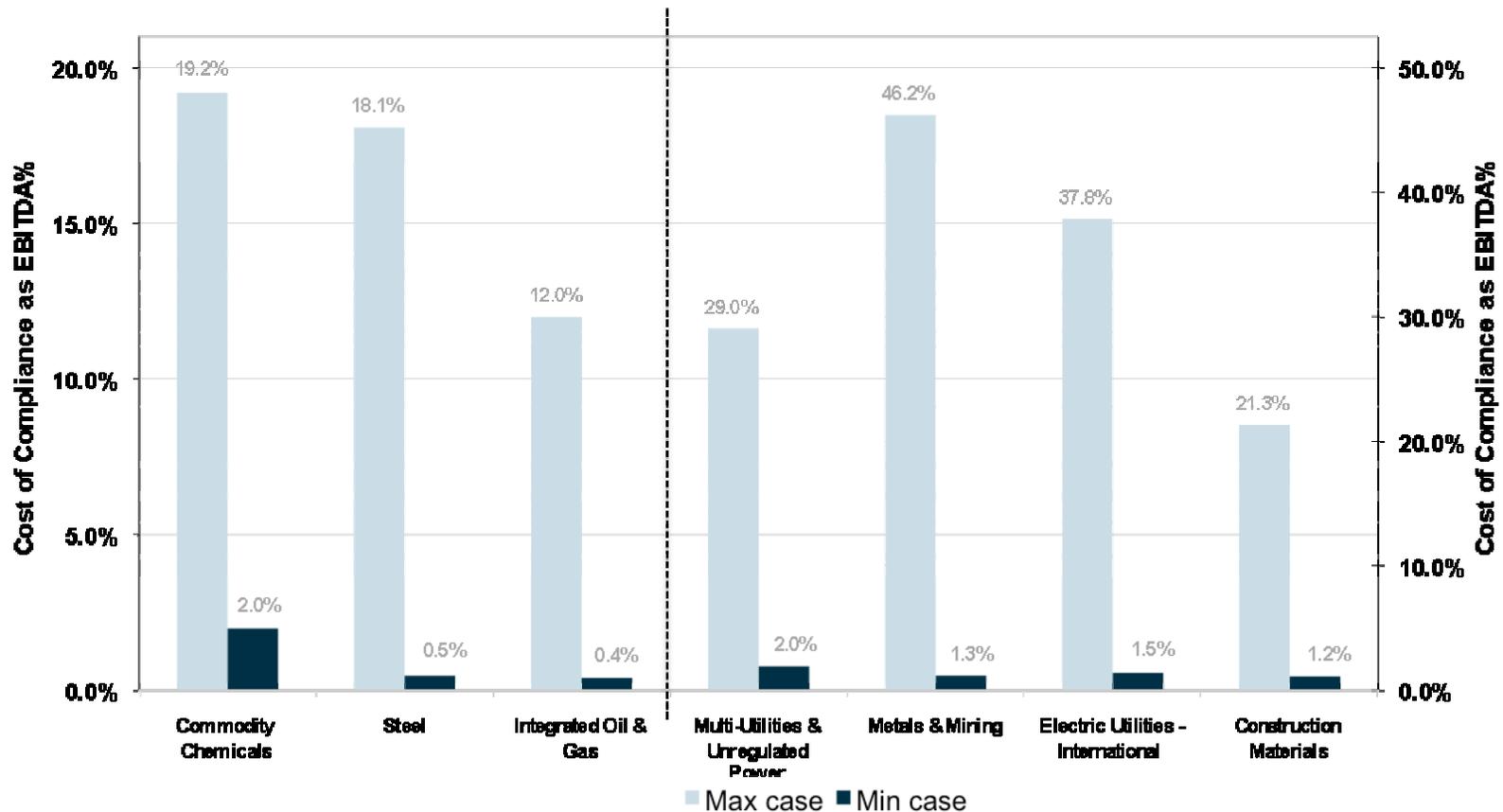
## Company Carbon Positioning

Scope 1: Direct Carbon Emissions (t CO2e):	31,700,000 r
Scope 2: Electricity Indirect Carbon Emissions (t CO2e):	NR
Scope 3: Other Indirect Carbon Emissions (t CO2e):	NR
Industry Average Direct Carbon Emissions (t CO2e):	8,891,174
Direct Carbon Emissions Ratio: <sup>(e)</sup>	3.57
Carbon Intensity (t CO2e /USD sales in millions):	1,381
Industry Average Carbon Intensity (t CO2e /USD sales in millions):	758
Direct Carbon Intensity Ratio: <sup>(f)</sup>	1.82

# Risk exposures and costs vary widely, both between and within sectors...



### CO<sub>2</sub> Regulatory Cost of Compliance as Percentage of EBITDA

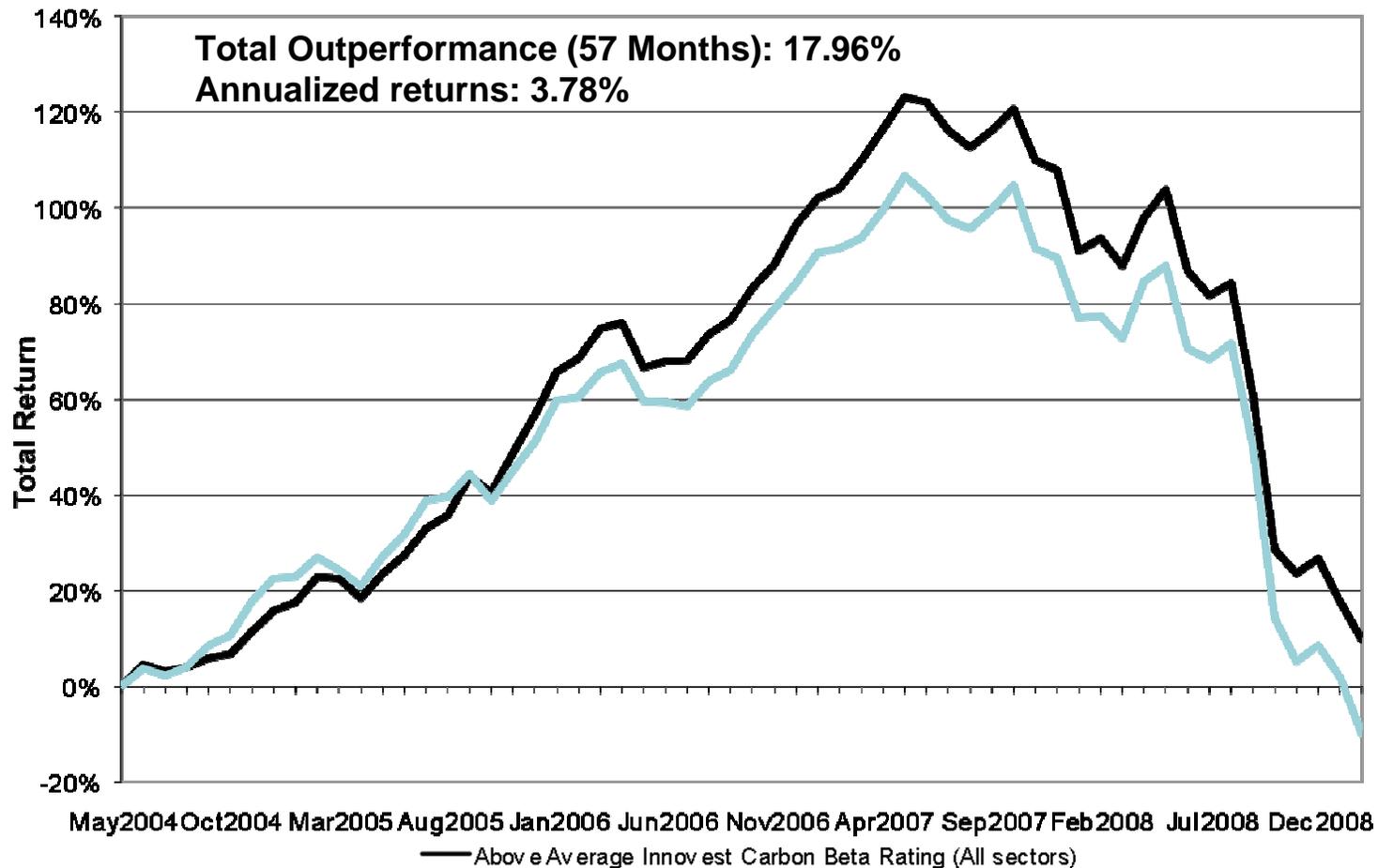




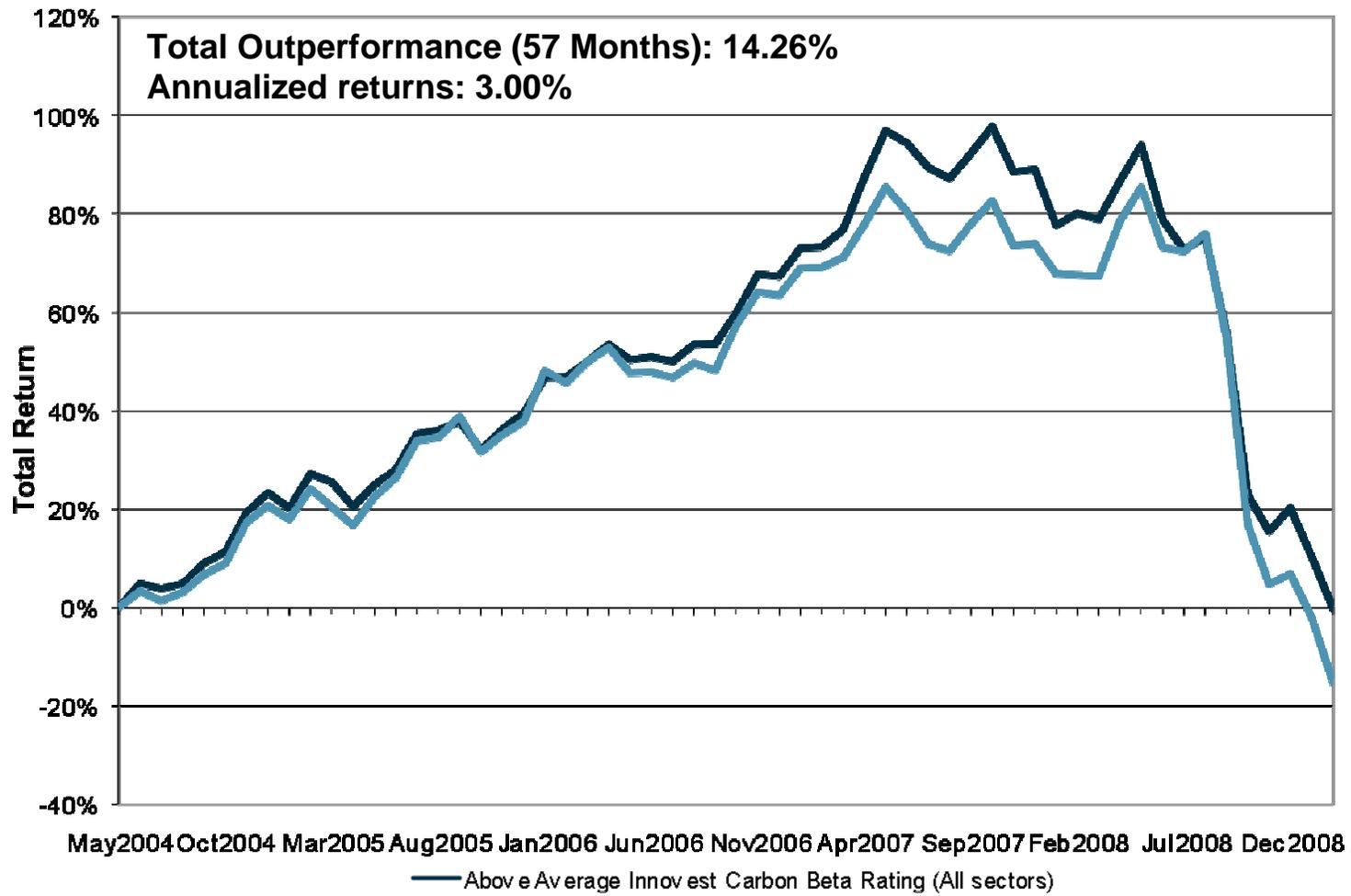
# Carbon Beta Performance Summary

<b>World/All sectors</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	16.42%	3.46%	17.96%	3.78%
Carbon beta Rating Laggards monthly return	-1.54%	-0.32%		
<b>North America/All sectors</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	7.24%	1.52%	14.26%	3.00%
Carbon beta Rating Laggards monthly return	-7.02%	-1.48%		
<b>Europe/All sectors</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	16.09%	3.39%	34.76%	7.32%
Carbon beta Rating Laggards monthly return	-18.66%	-3.93%		
<b>Asia-Pacific/All sectors</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	4.93%	1.04%	2.20%	0.46%
Carbon beta Rating Laggards monthly return	2.73%	0.57%		
<b>World/Utilities</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	52.15%	10.98%	49.23%	10.36%
Carbon beta Rating Laggards monthly return	2.93%	0.62%		
<b>World/Materials</b>	<b>Return for 57 months</b>	<b>Annualized return</b>	<b>Total Alpha</b>	<b>Annualized difference</b>
Carbon beta Rating Leaders monthly average return	25.38%	5.34%	19.72%	4.15%
Carbon beta Rating Laggards monthly return	5.66%	1.19%		

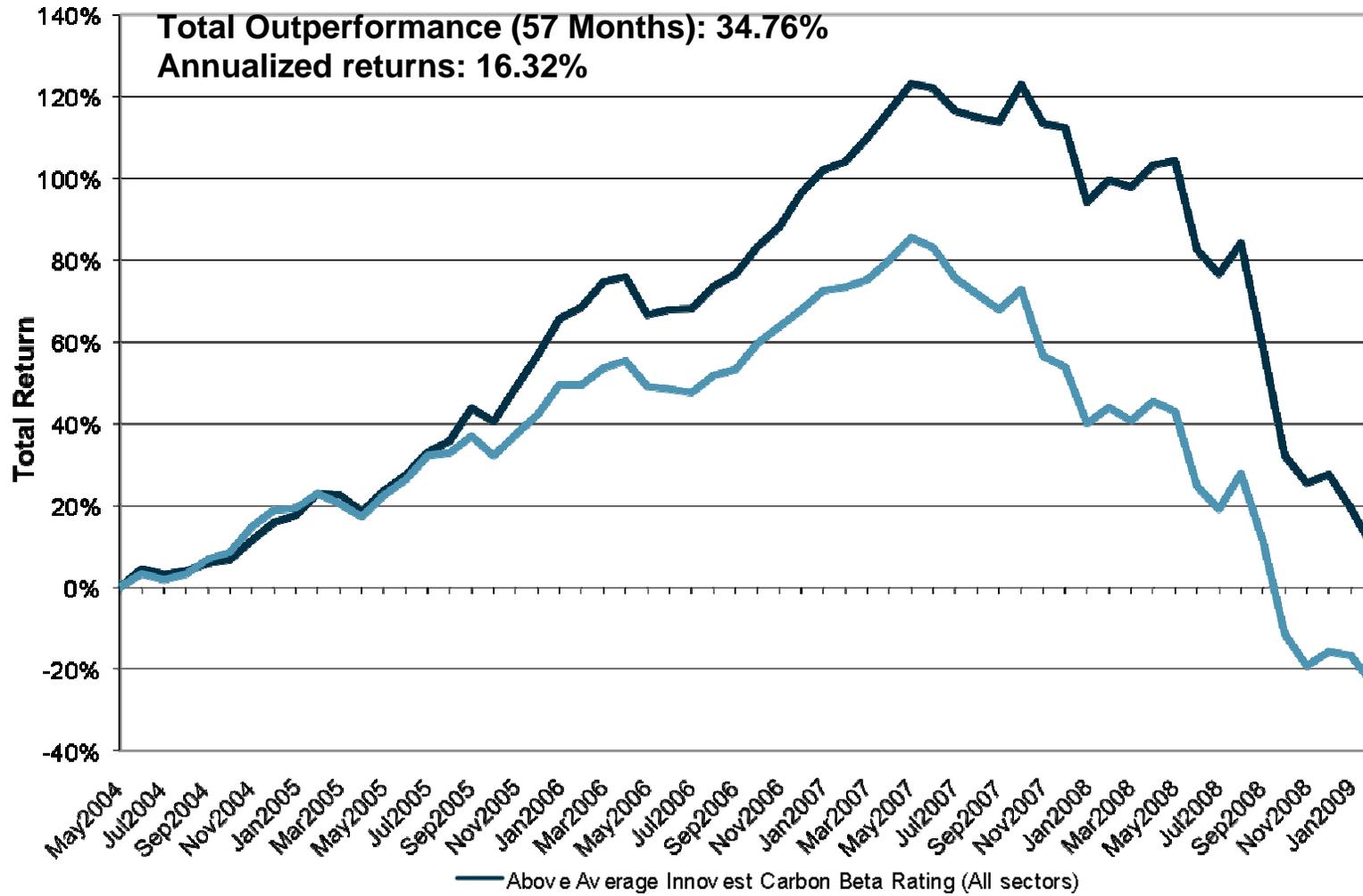
# Carbon Beta™ results: leaders vs. laggards Globally



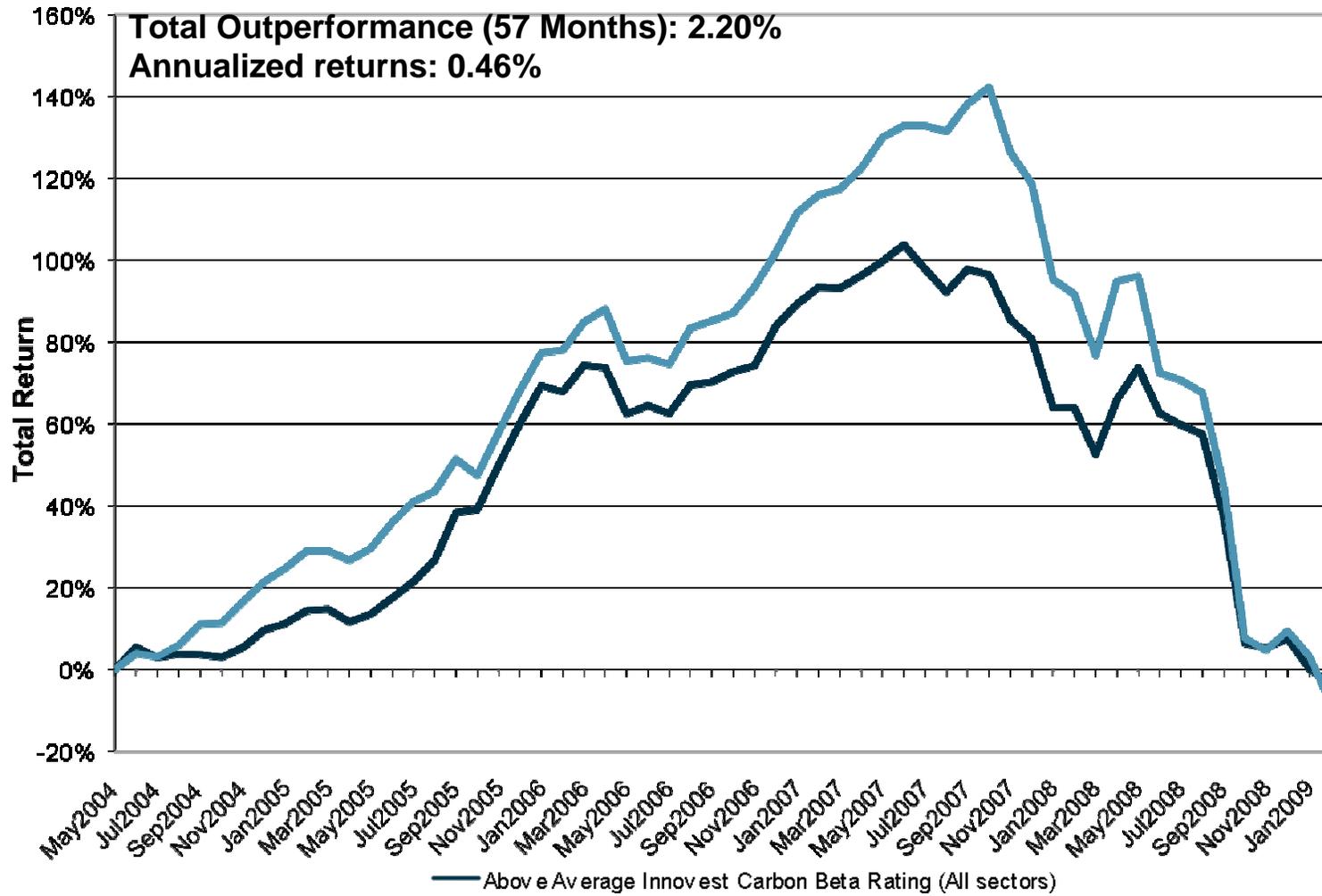
# Carbon Beta™ results: leaders vs. laggards North America



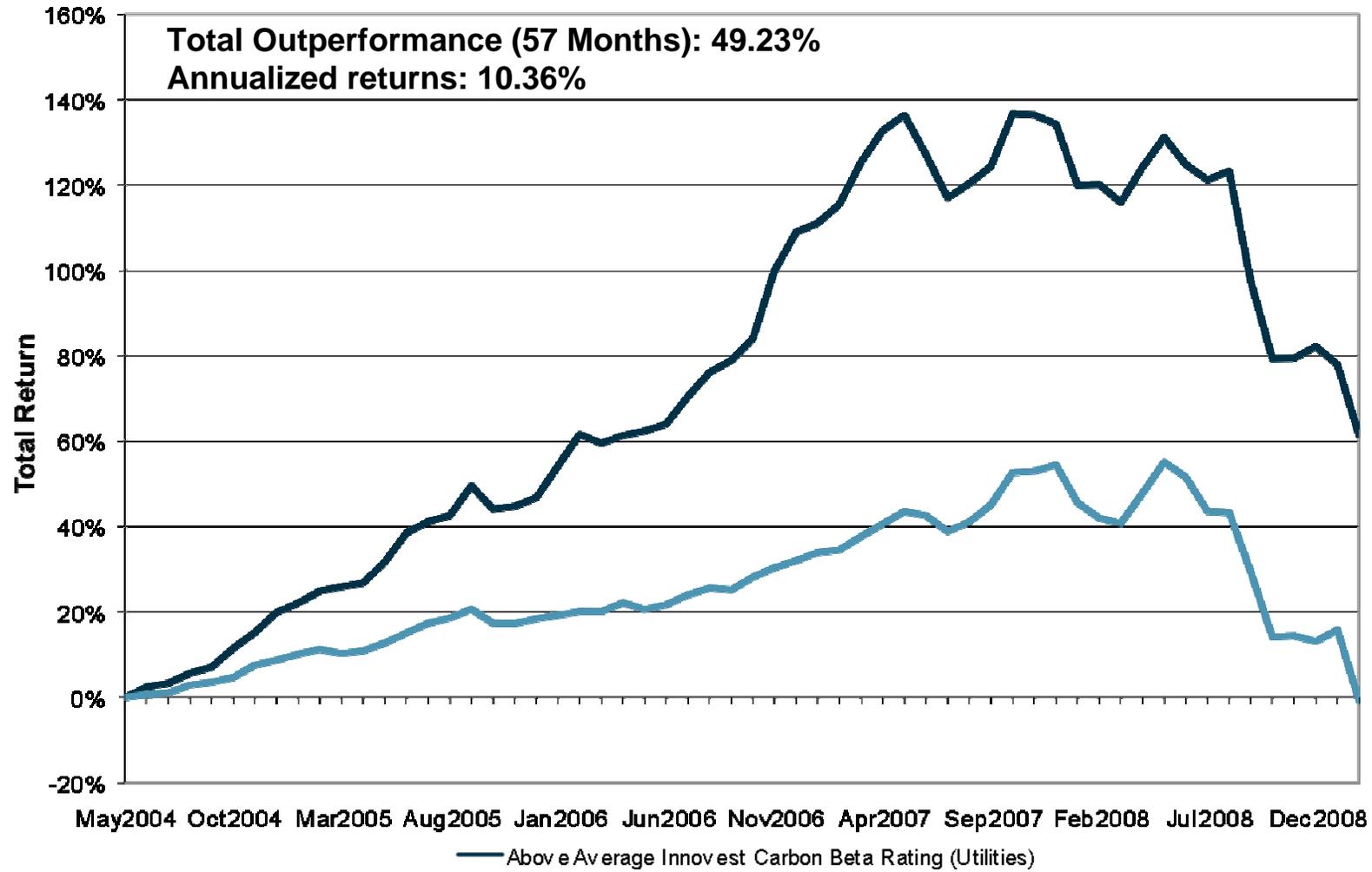
# Carbon Beta™ results: leaders vs. laggards Europe



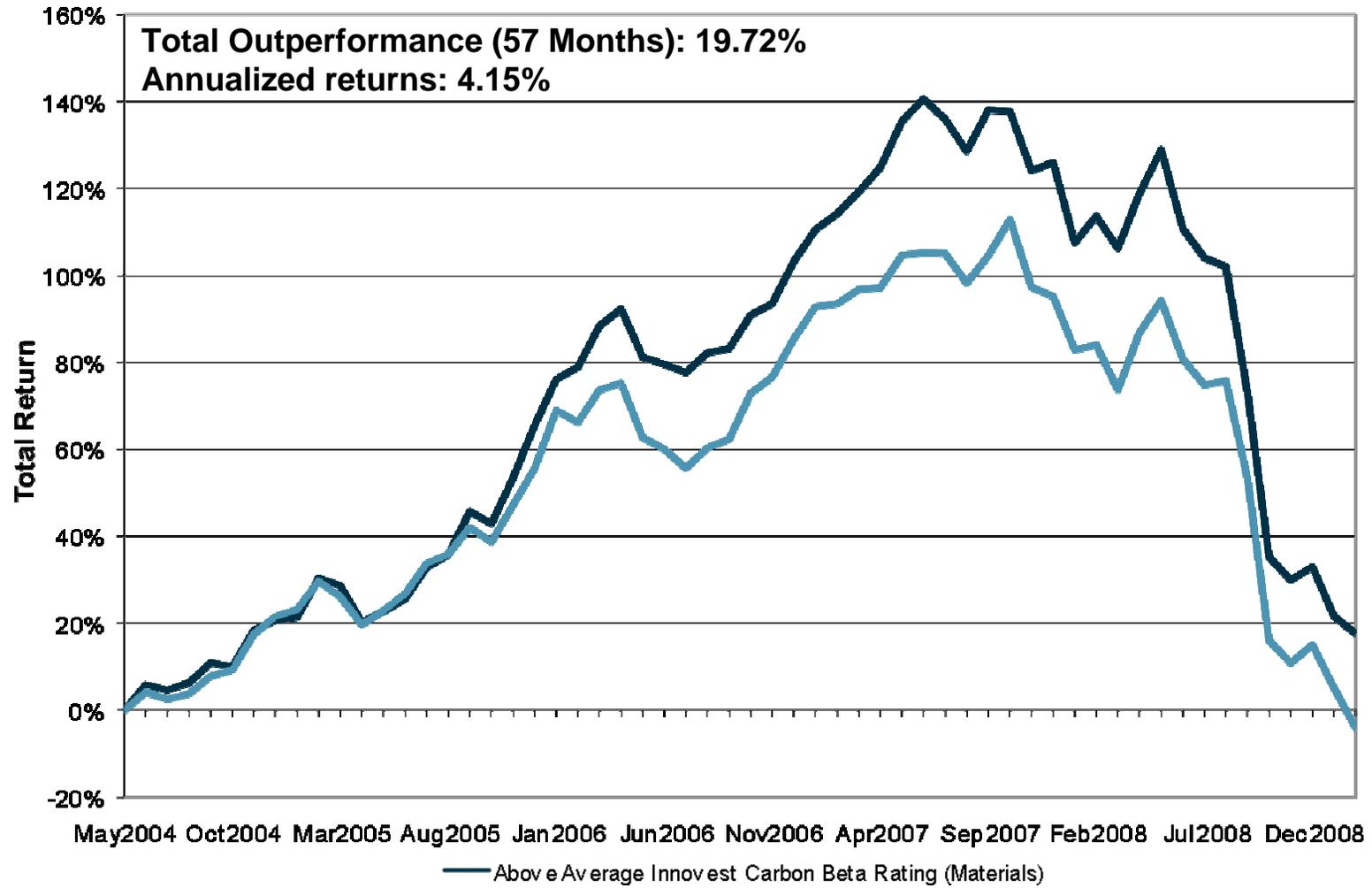
# Carbon Beta™ results: leaders vs. laggards Asia-Pacific



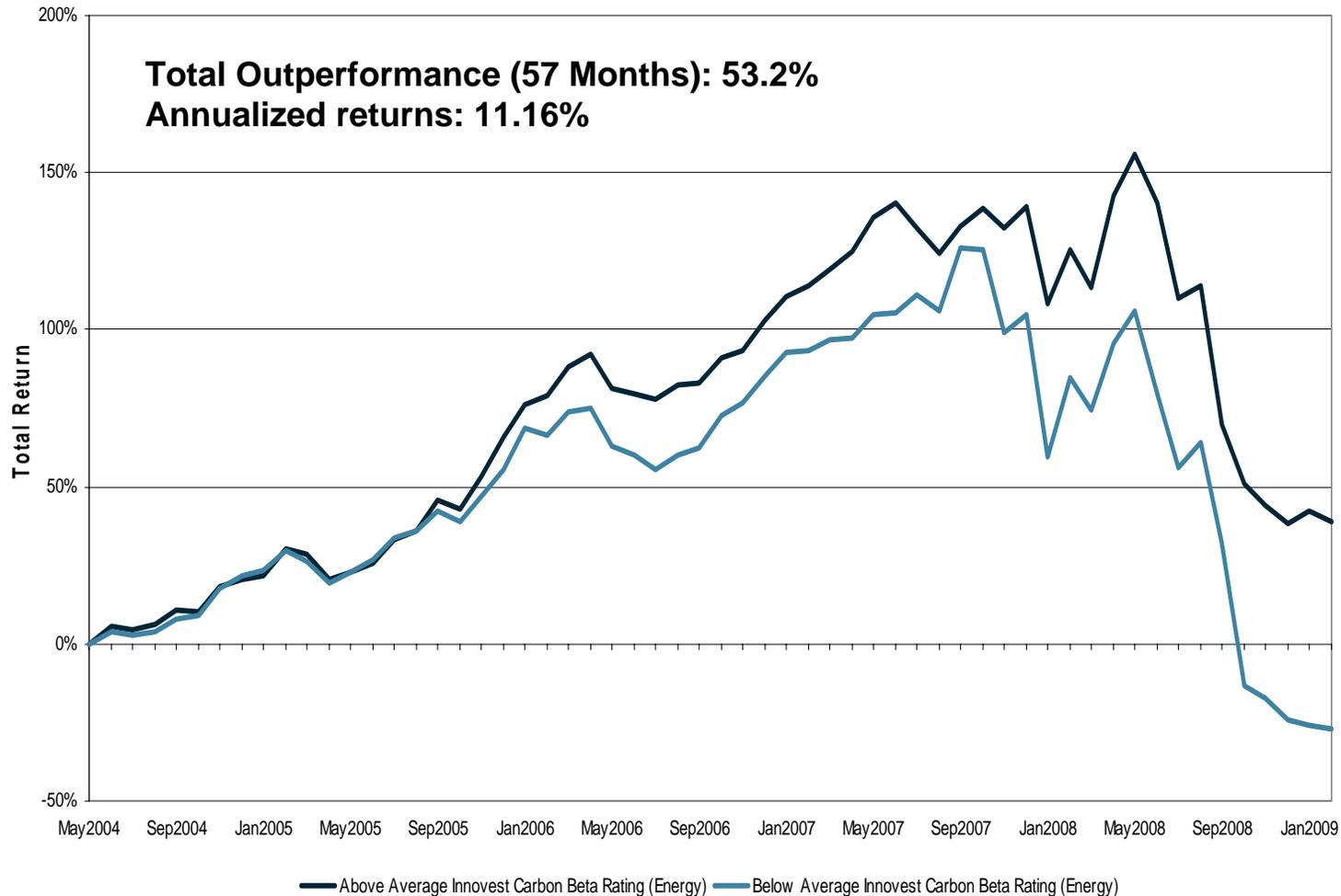
# Carbon risk and performance: Utilities Sector



# Carbon risk and performance: Materials Sector



# Carbon risk and performance: European Equity – Oil & Gas Sector



# Thank you

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## For further information

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