Investing in Climate Change 2010

What Now Post Copenhagen?

Eilat-Eilot
International Renewable Energy Conference
February 17, 2010

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http://www.dbcca.com/research

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Deutsche Bank: Global firm, extensive resources

A global organization

Deutsche Bank

- Established in 72 countries worldwide
- A+ rated by Standard & Poors
- Tier 1 capital ratio of 11.7%

Businesses that serve a broad range of clients

Private Clients and Asset Management			Corporate and Investment Bank		Corporate Investments
Asset Management	**Private & Business Clients**	**Private Wealth Management**	**Global Banking**	**Global Markets**	**Corporate Investments**

Deutsche Asset Management
$695 billion AUM

A full range of asset management capabilities

DB Advisors: Institutional	**Insurance**	**Alternatives**	**Retail**
$241 billion	**$160 billion**	**$58 billion**	**$237 billion**

$459 billion
managed for institutional clients worldwide

DB Climate Change Advisors

As of September 30, 2009

Assets shown in US dollars. Due to rounding, numbers may not add up to total.

DBCCA at Copenhagen

- DB Climate Change Advisors (DBCCA) is the institutional climate change business of Deutsche Asset Management. As such, we have a fiduciary interest in climate change policy evolution.

- The goal of DBCCA's presence was to highlight the importance of private sector finance to achieve scale in the clean technologies and renewable energy. In addition to our event, we attended climate change policy briefings and the COP15 Conference.

- Under the leadership of Kevin Parker, DB Climate Change Advisors partnered with the UN Foundation to host a reception and dinner attended by senior climate change policy makers, financiers and stakeholders.

From Copenhagen to Low Carbon Prosperity

- The Copenhagen Accord leaves us with a choice – we can decide the glass is half full or the glass is half empty. The majority of the analysis seems to suggest the latter because not only was there no legally binding agreement but also not even an agreed global emission reductions target.
- We, however, believe the "Glass is half full" largely because the coalition of those who want to take action expanded to the key emerging markets (China, India, Brazil, and South Africa) and the Copenhagen Accord was drafted by senior leaders of these four countries plus the President of the United States – an unprecedented outcome in international negotiations and one that provides an important foundation toward a more ambitious international agreement based on this political understanding.
- For investors in climate change sectors, this outcome will have little impact for the next few years outside of the carbon markets themselves, if they fail to develop as a result of the lack of a global agreement. Carbon markets are only going to affect investment decisions in the long-run as it will be many years before a robust, stable and hedgeable carbon price emerges.
- The Copenhagen Accord recognizes that policy will be enacted at a national and regional level rather than at a supranational level. All countries have been asked to report their commitments and plans for climate action by January 31 2010.

Overview of Copenhagen Accord

1 Long-term global target	Recognizes 'scientific view' to hold warming to below to 2oC; review in 2015 on whether to tighten to 1.5ºC. Agreement to peak emissions 'as soon as possible'.
2 2020 target for industrialized countries	No agreement on individual or aggregate targets. Industrialized countries to submit targets by 31 January 2010
3 Low carbon growth plans in developing economies	No formal agreement on individual or aggregate targets. No commitment to low carbon growth plans, but acceptance of a registry for Nationally Appropriate Mitigation Actions (NAMAs) and 'provisions for international consultation and analysis under clearly defined guidelines' to ensure action is credible. Developing (emerging) economies to submit NAMAs by 31 January 2010.
4 REDD	Crucial role of REDD+ recognized, but fundamental consensus on detailed implementation lost in final Accord. Initial funding of USD3.5bn from 2010-12 agreed
5 Adaptation	Recognition of the need for urgent action on adaptation particularly in most vulnerable least developed countries.
6 Technology Transfer	Creates a new Technology Mechanism, but no agreement on the proposed Climate Technology Centre and Network.
7 Finance	Commitment of USD30bn in public finance for 2010 to 2012. Commitment of USD100bn in public and private financial flows to developing countries by 2020 "in the context of meaningful mitigation actions and transparency on implementation". Establishment of High Level Panel to investigate sources of finance. Establishment of a new 'Copenhagen Green Climate Fund'.
8 Carbon Markets	No agreement on how to scale up carbon markets. Decision on carbon capture and storage (CCS) and nuclear postponed to 2010. Modalities defined to allow developers to appeal against UN panel rejections of CDM projects.
9 International Transport	No agreement to start negotiations on international transport
10 Trade	No mention of trade implications

Source: UNFCCC, HSBC, Citi, DBCCA analysis, 2010.

Investing in Climate Change – 2010 Outlook

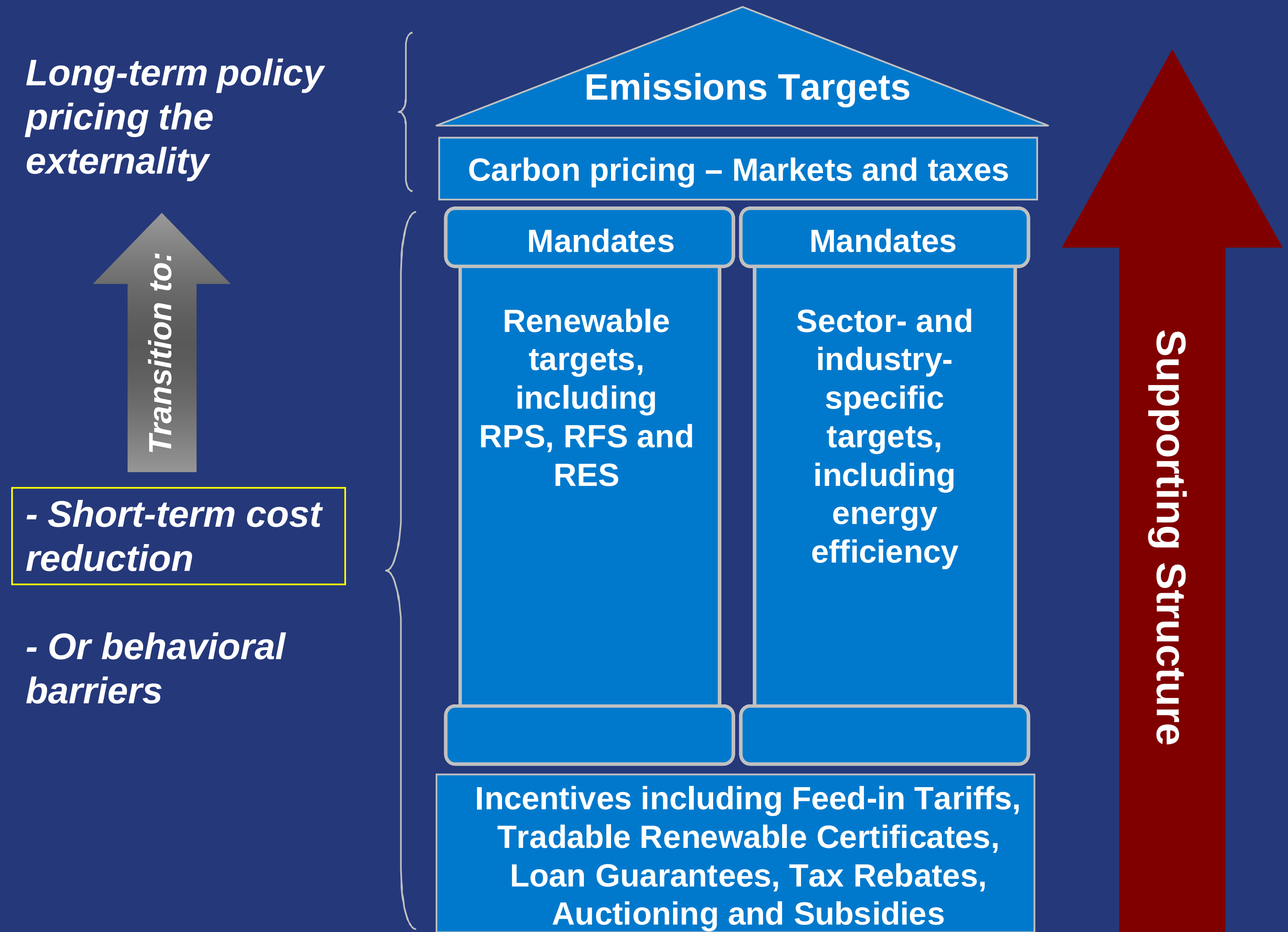
- Market drivers for climate change investments remain robust driven by mandates and innovation policy. Our 2010 Outlook is bullish for public markets, private equity / venture capital and infrastructure investments.
- At a macro level, climate change investment involves a unique blend of technology innovation, environmental protection, national security, and economic recovery.
- Climate change investment covers several key areas – clean energy, energy efficiency, agriculture and water, and is a secular beneficiary of global growth trends, particularly in developing markets. Overall, clean energy, energy efficiency, water and agribusiness managed to outperform the world equity markets from the bottom of the market through the end of 2009. They also exhibit outperformance on a three year basis.
- The investment attributes of climate change sectors apply to a broad spectrum of asset classes. Infrastructure project finance is the heart of capital flows in these sectors and needs to attract institutional capital to deliver the volume response necessary for climate change abatement in the capital intensive power generation sector.
- Climate change investment as a percent of total market size by asset class has grown rapidly. Investors should consider overweighting climate change in their portfolios in light of the size and secular growth potential of the theme.
- Our analysis demonstrates that on a historical basis, inclusion of climate change sectors in a portfolio improves expected returns. At a sector level, we have not made any specific tilt towards the four major sectors of clean energy, energy efficiency, water, or agribusiness. In the long run, we believe that all of these sectors are attractive.

CO2 abatement and capital expenditures in the IEA's 450 - Scenario

	Abatement Gt CO2		Incremental Capex ($ 2008 bn)	
	2020E	2030E	2010 - 2020E	2020 - 2030E
Efficiency	2.5	7.9	$1,999	$5,586
Renewables	0.7	2.7	$527	$2,260
Biofuels	0.1	0.4	$27	$378
Nuclear	0.5	1.4	$125	$491
CCS	0.1	1.4	$56	$646
Total	**3.85**	**13.84**	**$2,734**	**$9,361**

Source: How the Energy Sector Can Deliver on a Climate Agreement in Copenhagen: Special early excerpt of the World Energy Outlook 2009 for the Bangkok UNFCCC meeting; © OECD/IEA, 2009.

Stylized current policy structure and relationships



Source: DBCCA analysis 2009.

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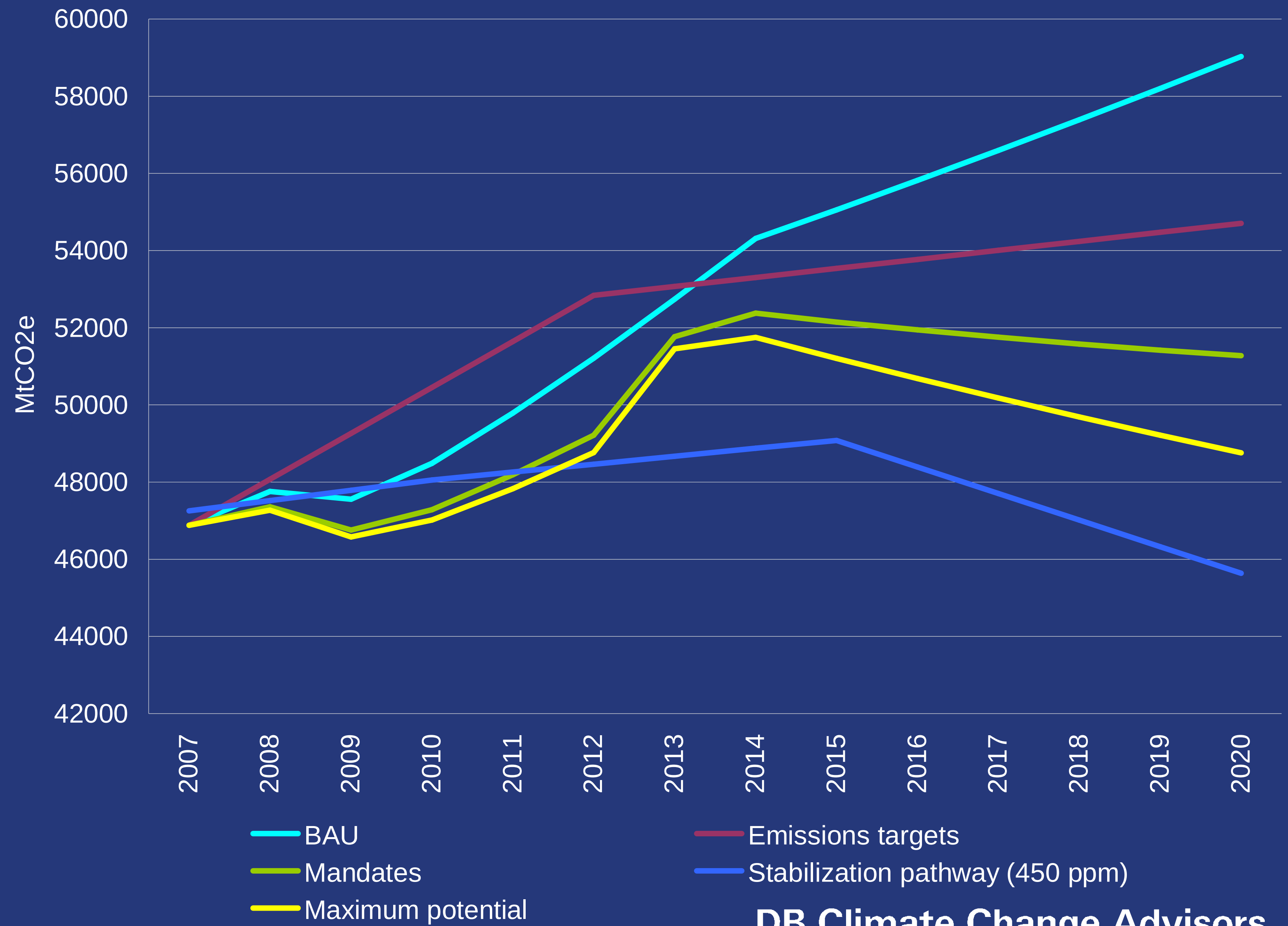
World emissions pathway



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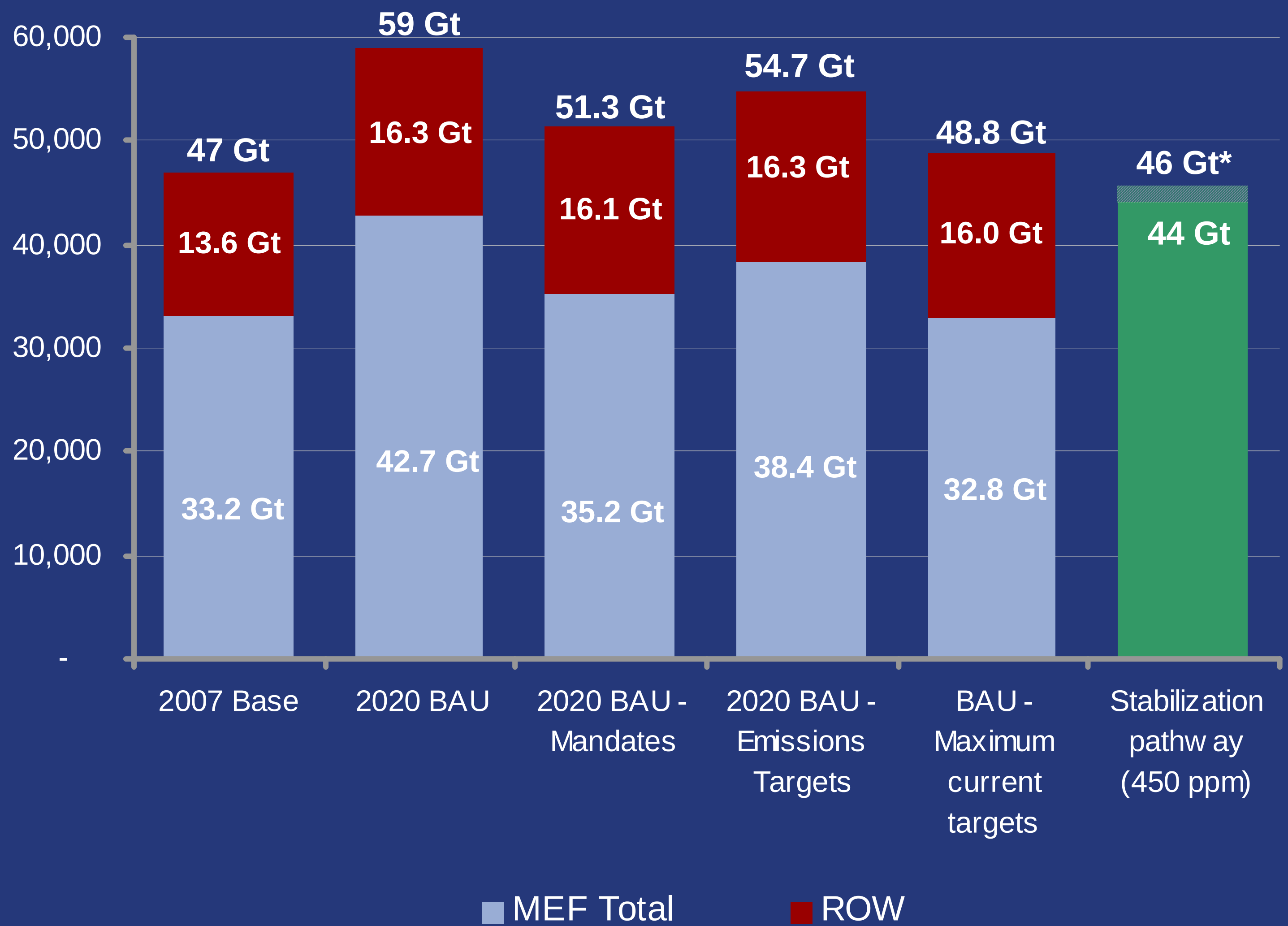
 Source: CCC, DBCCA analysis 2010.

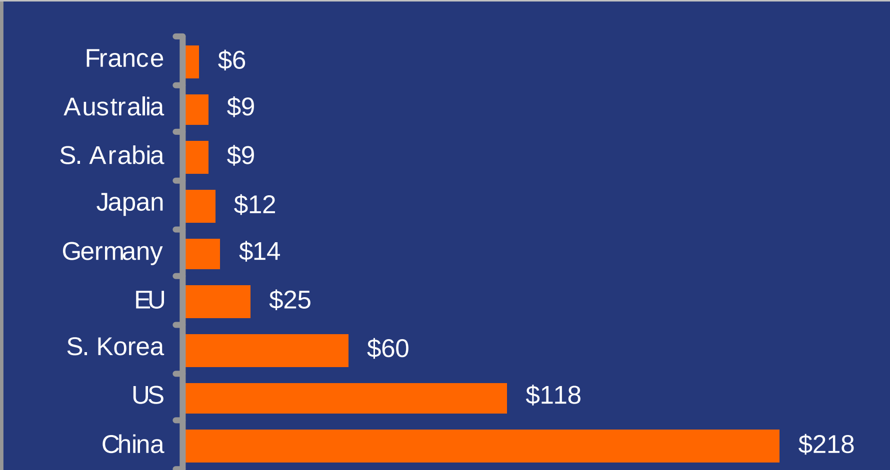
The 2020 estimated outcome



*Source: CCC, DBCCA analysis 2010. * Range of 450 ppm pathways – 44 Gt source Project Catalyst estimates (http://www.project-catalyst.info/images/publications/comparability_memo.pdf); 46 Gt source OECD Environmental Outlook to 2030 (2008, p. 140) estimates.*

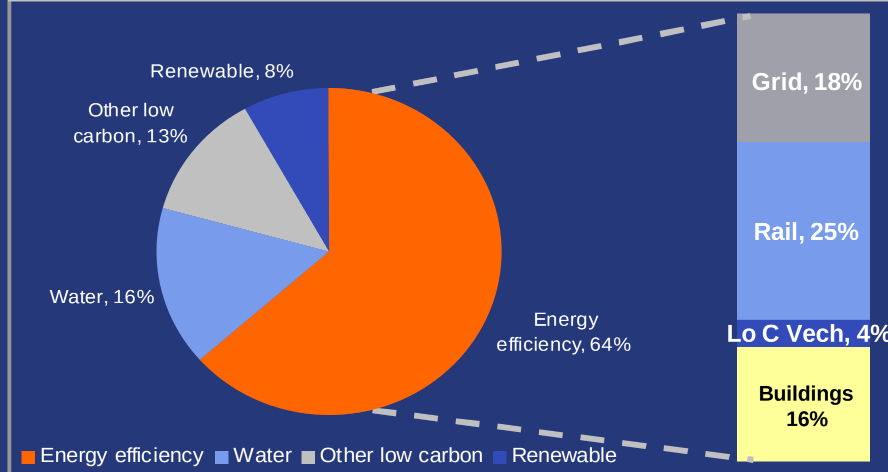
"Green" measures in global economic stimulus legislation

Green stimulus ranking (USD bn)



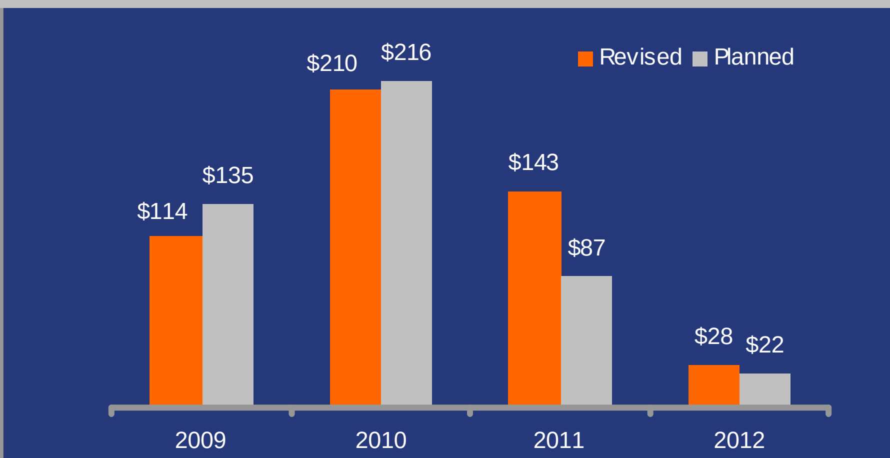
Source: HSBC, "A Global Green Recovery? Yes but in 2010," 2009.

Allocation of green stimulus (USD512bn)



Source: HSBC, "A Global Green Recovery? Yes but in 2010," 2009.

Timing of the stimulus (USD bn)



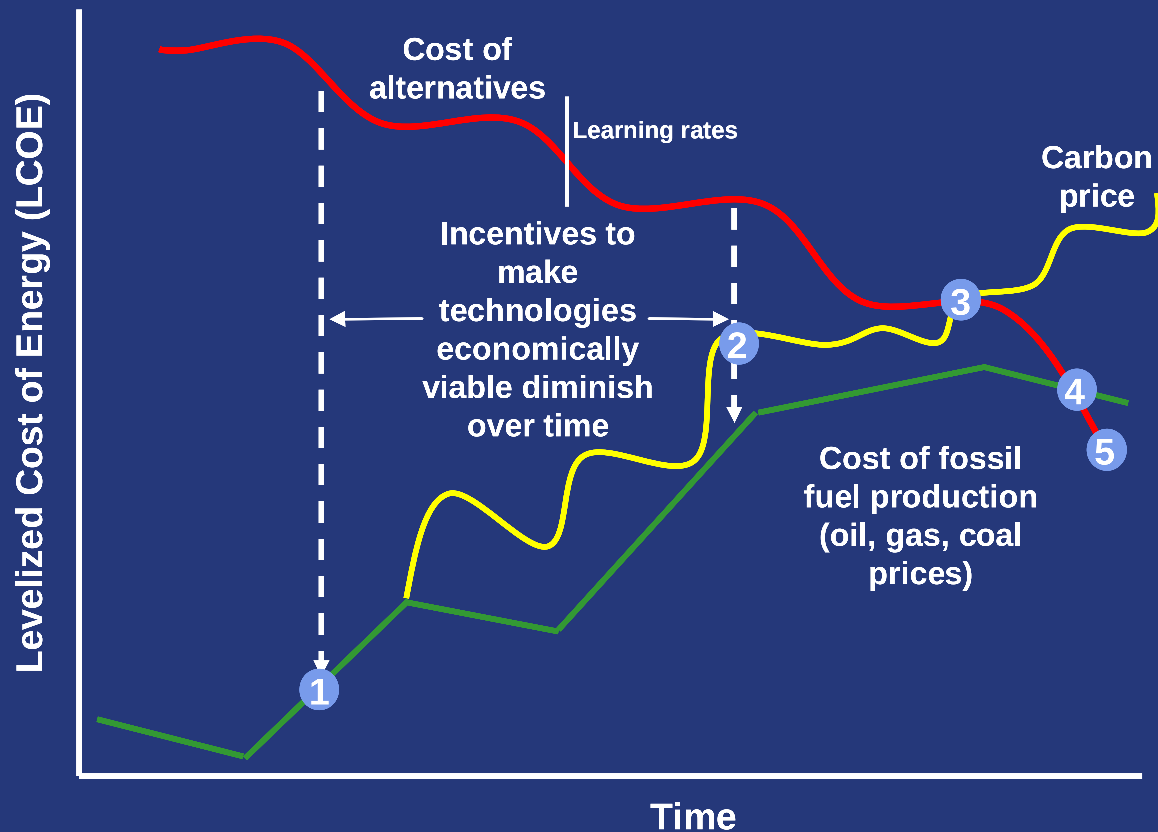
Source: HSBC, "A Global Green Recovery? Yes but in 2010," 2009.

Green measures in global stimulus

Sector	Geography		
	US ($bn)	EU ($bn)	China ($bn)
Energy Efficiency	16.4	17.2	0
Mass transit	17.7	13.6	0
Clean autos	3.3	18.9	0
Renewables	9	8.4	~29 (power gen.)
Smart Grid	11	0.8	~70 (total grid)
Water	13	0	~2.9
Research	7.1	1.32	0
Env. Cleanup	7.1	0	~1.8
Total spending	**84.6**	**60.2**	**~103.7**
Tax credits	**21.6**	**0**	**0**
Total	**106.2**	**60.2**	**~103.7**

Source: DBCCA analysis, February 2009.

Commercial Breakeven – Electricity Grid Parity with and without carbon pricing and subsidies for a specific opportunity



1. Commercial break-even with subsidies without carbon pricing e.g: some US states
2. Commercial break-even with carbon pricing and subsidies e.g: EU
3. Commercial break-even with carbon pricing without subsidies
4. Commercial break-even without carbon pricing or subsidies
5. Beyond Breakeven

Source: DBCCA analysis, 2008.

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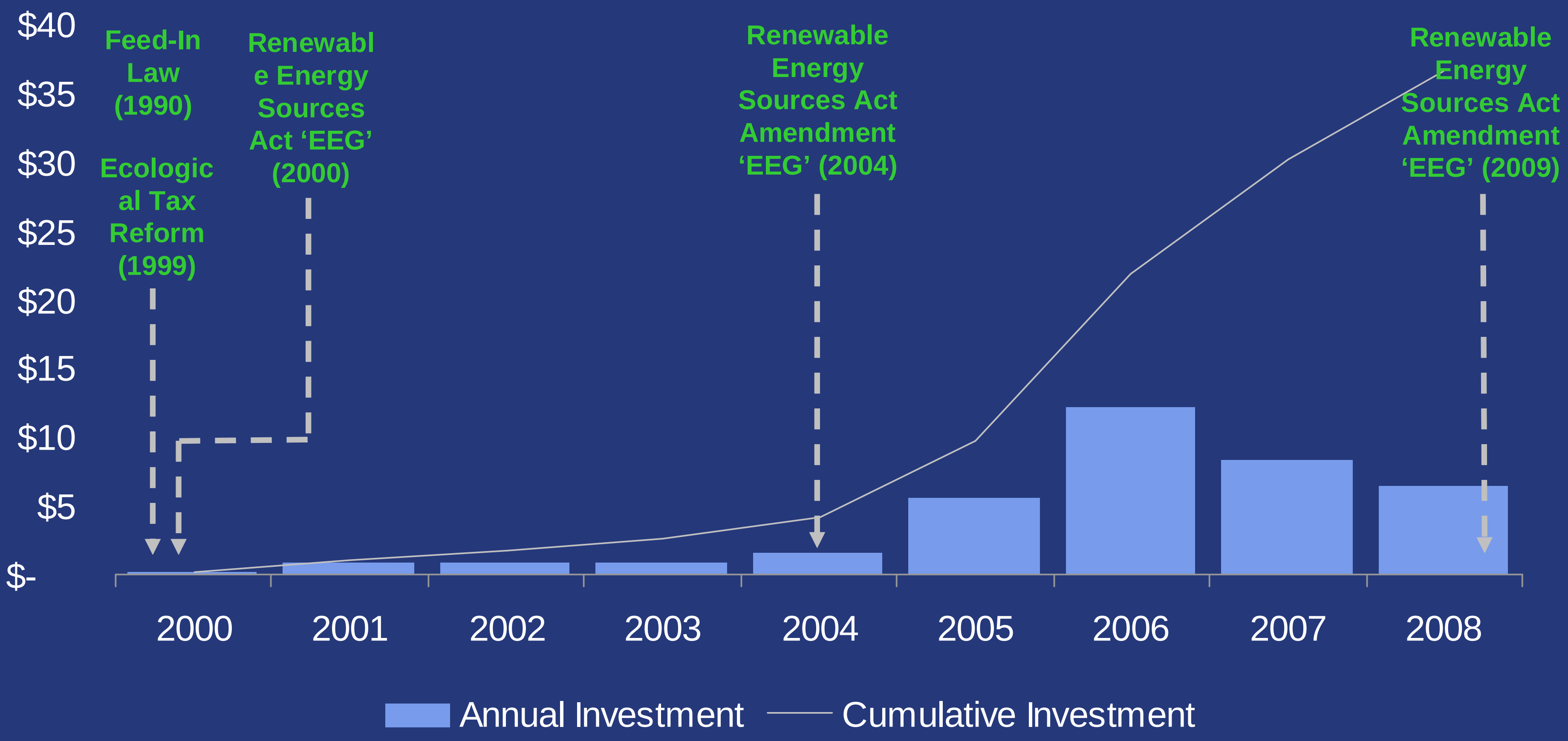
What do investors want from policy?

Investors essentially look for 3 key drivers in policy:

Transparency
Longevity
Certainty and Consistency

In assessing the potential success of policies, these factors should be taken into account.

German legislation boosts renewable energy investment

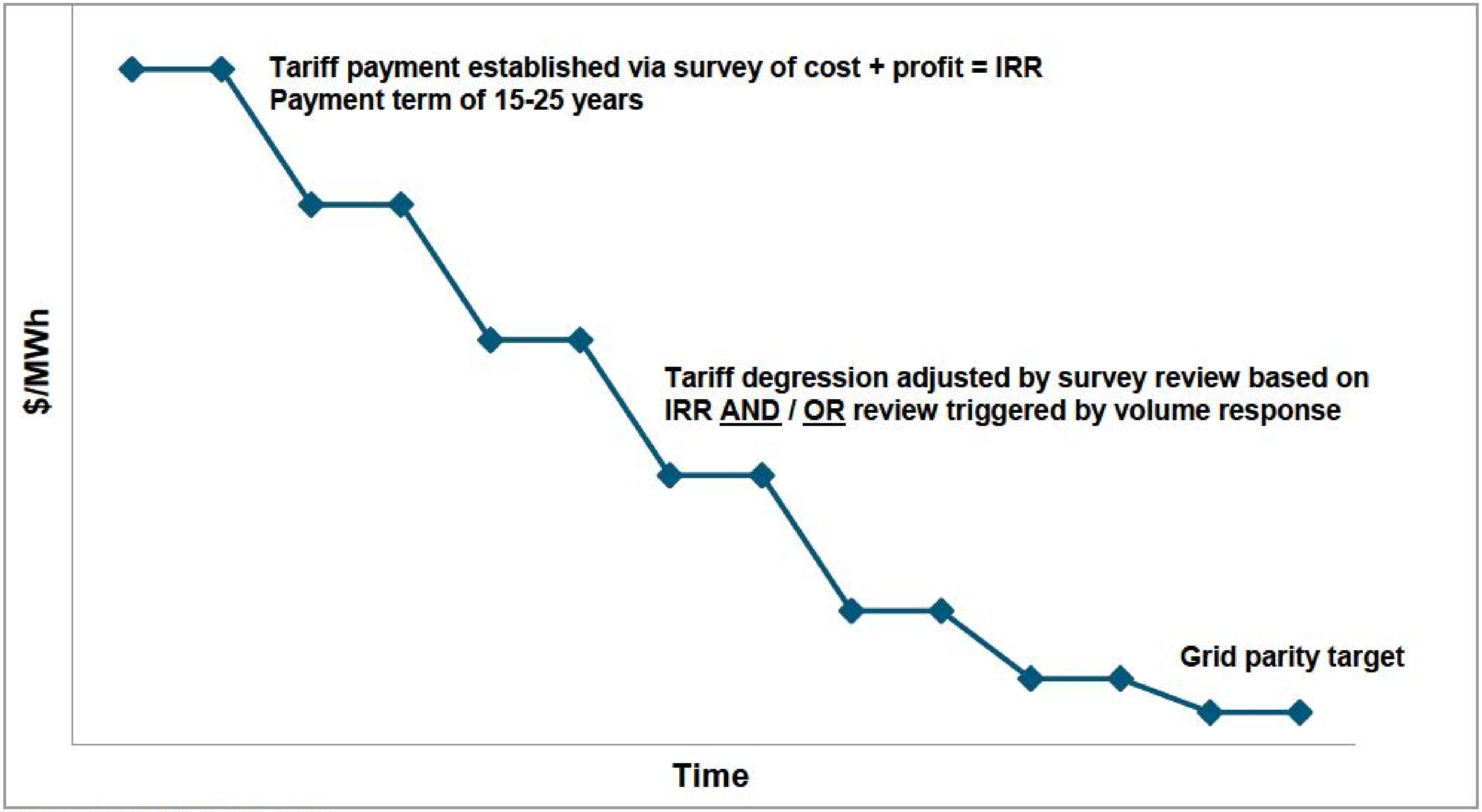


Annual Investment CAGR 2000 - 2008 = 55%

Cumulative Investment CAGR 2000 - 2008 = 93%

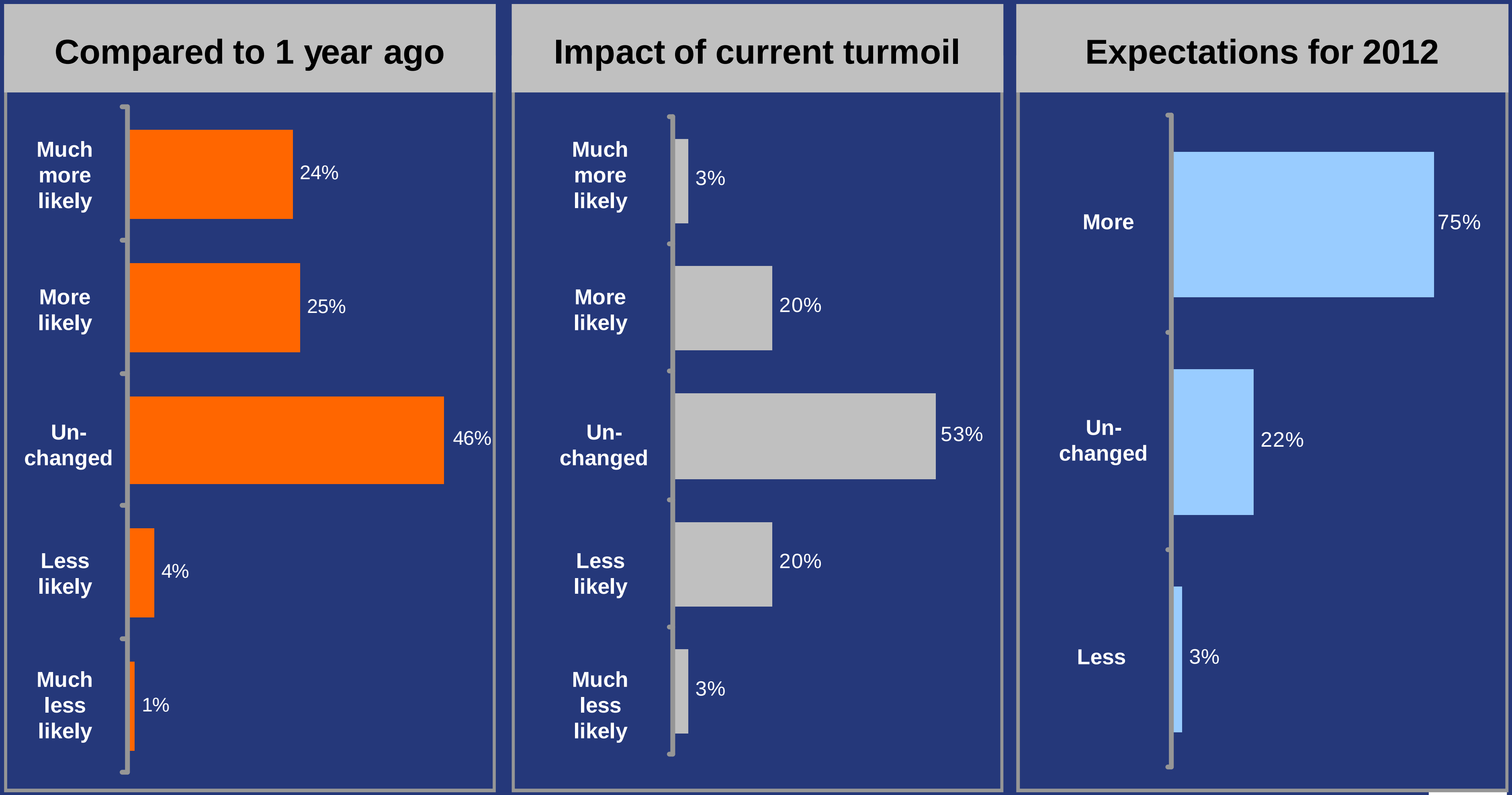
Note: Investment figures are based on New Energy Finance's PE/VC, Asset Financing and Public Markets database, which comprises of disclosed investment amounts. This may not accurately represent all investments made in the renewable energy sector during this time period. Market cap data is sourced from Bloomberg, 2009.

The Feed-in-Tariff is a preferred means of incentivizing the growth of clean energy, offering ‘TLC’ to investors.



Source: DBCCA analysis, 2009.

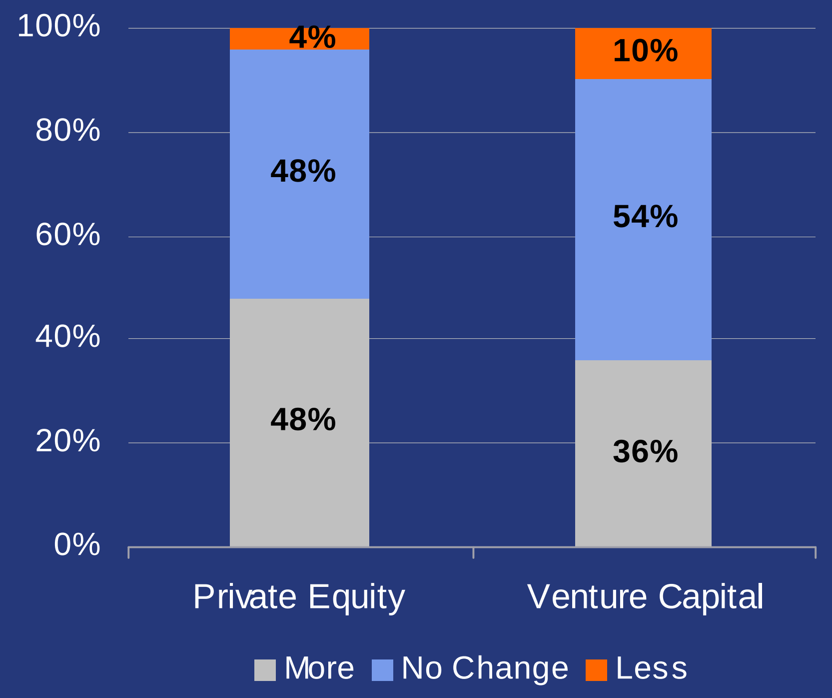
Increasing momentum towards clean energy investments, according to NEF survey



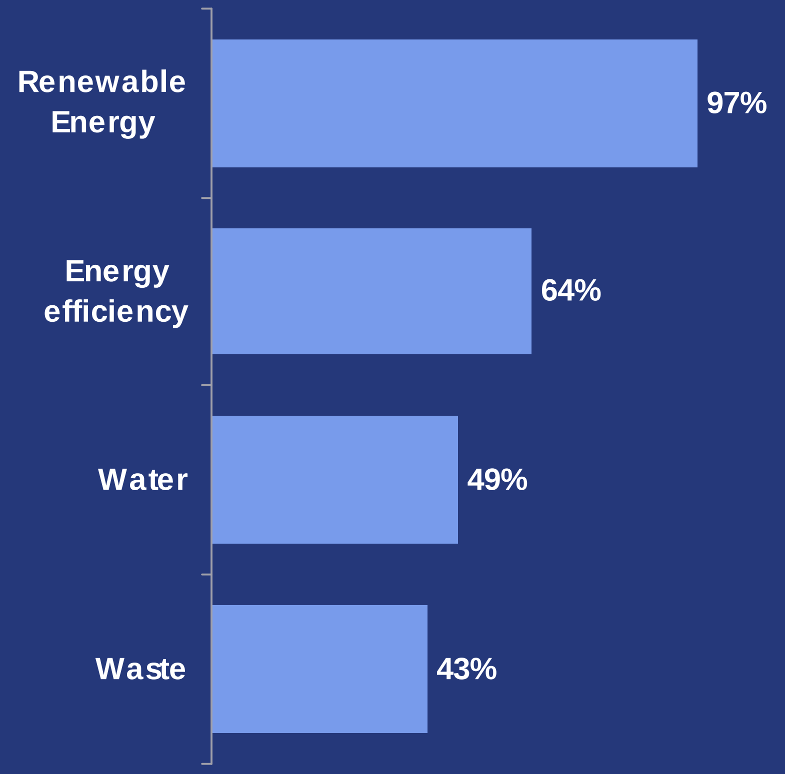
Source: New Energy Finance, 2009. Note: Figures above are based on a survey of 106 institutional investors, with approximately $1 trillion assets under management in total. Results are as of March 2009.

Institutional investors maintain interest in PE/VC and climate change sectors, according to NEF survey

Expected change to allocations by 2012



Investment themes of interest



Source: New Energy Finance, 2009. Note: Figures above are based on a survey of 106 institutional investors, with approximately $1 trillion assets under management in total. Results are as of March 2009.

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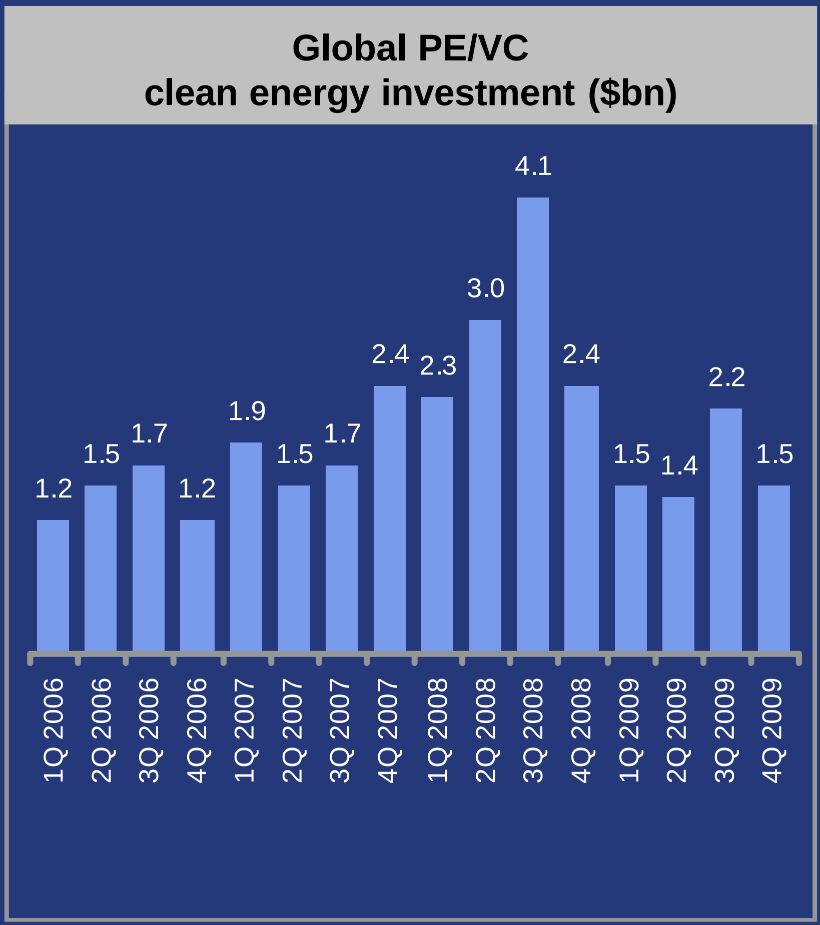
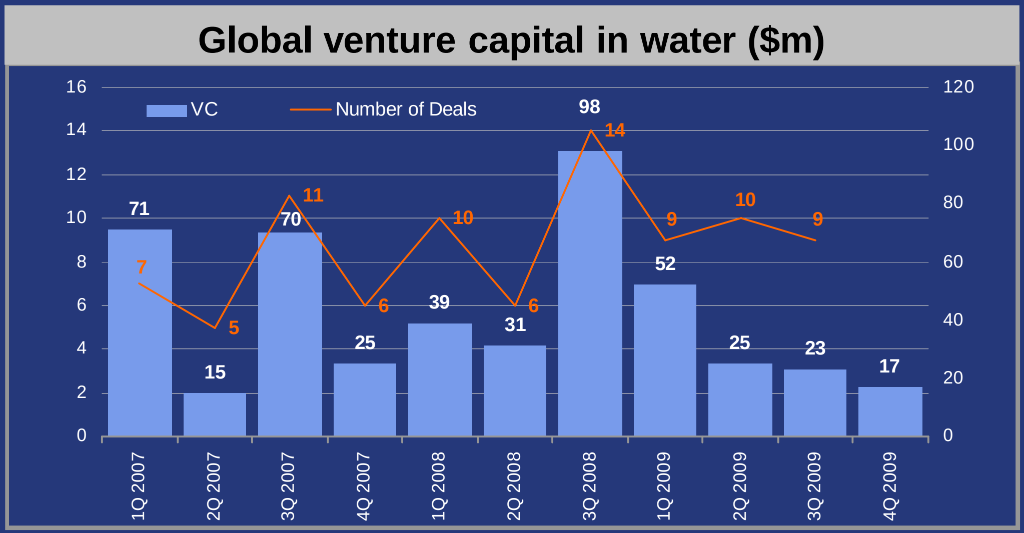
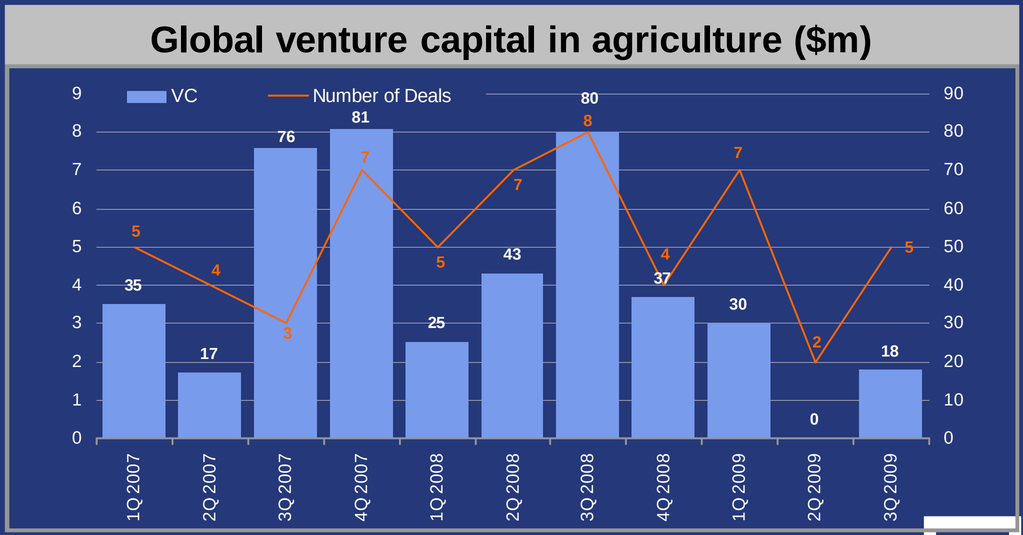
Global clean energy PE / VC



Source: New Energy Finance 2010.





Source: Clean Tech Group

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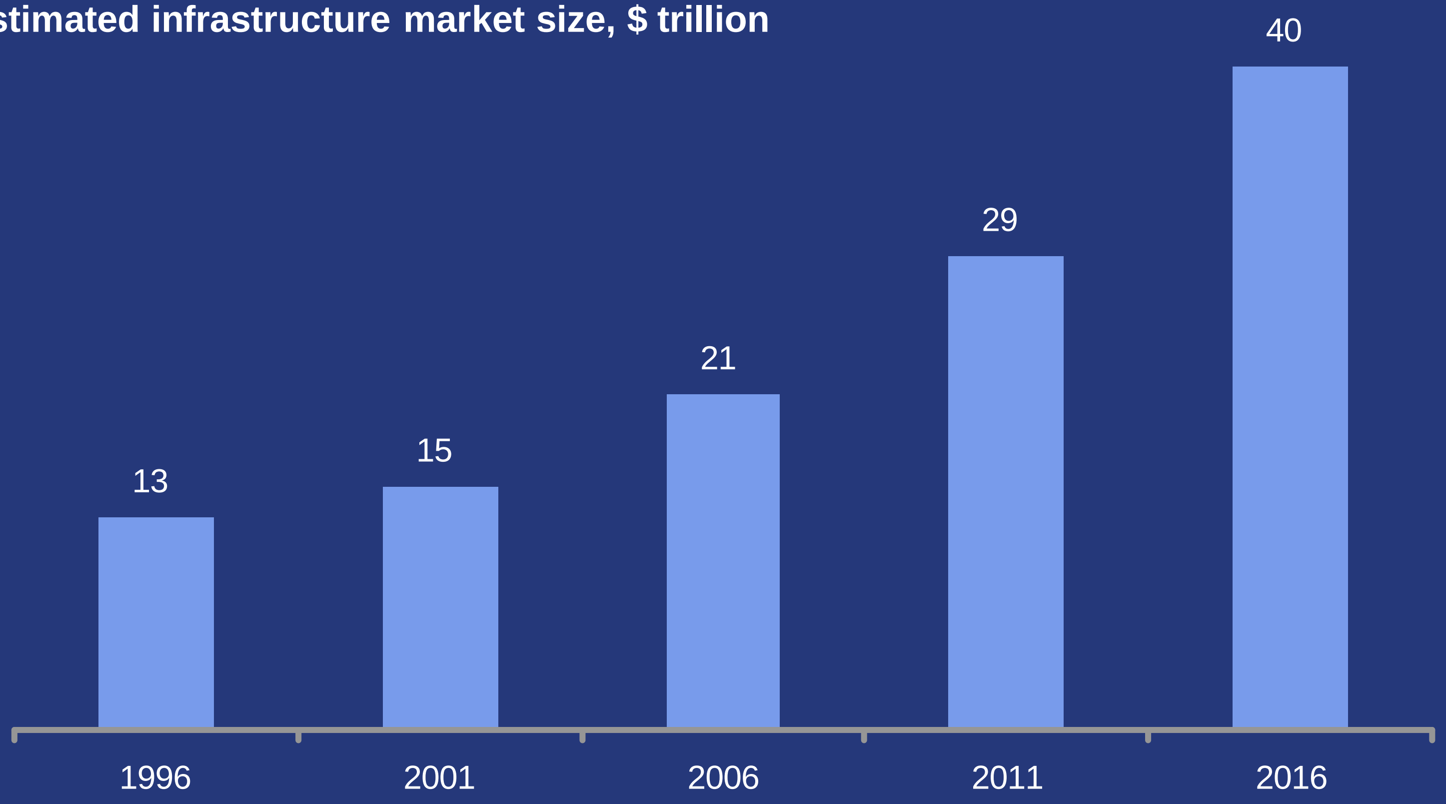
Infrastructure growth estimates

Infrastructure is already a very large market and is growing rapidly. Investors will be able to access this growth through dedicated strategies and focused renewable infrastructure funds.

Estimated infrastructure market size, $ trillion



Source: RREEF Research
Note: Some of this information is a forecast and due to a variety of uncertainties, and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ from those presented.

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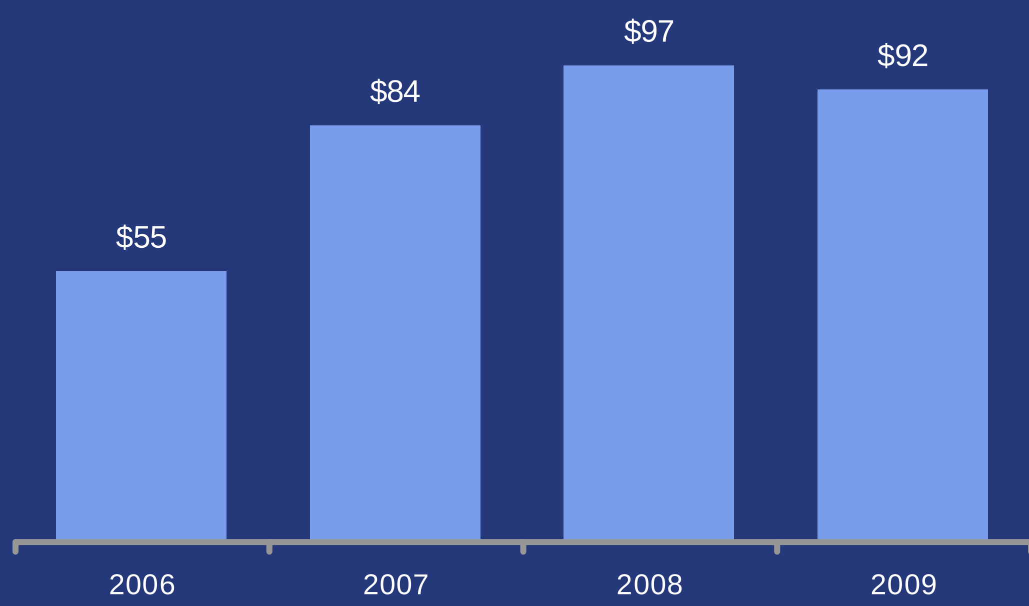
Global project finance for clean energy projects

Project finance has been the largest clean energy investment segment for new capital, and on balance, was only modestly impacted by the economic downturn relative to other asset classes. Projects in China and the UK in particular attracted large amounts of capital in 2009. In the US, the number of completed deals declined year-over-year due to the credit crisis, slowdown in the tax equity market and lagged implementation of government stimulus. Despite a drop off in 2009, European project finance was relatively more resilient due to a continuation of policy support and feed-in-tariffs.

Global new-build project finance for clean energy projects ($bn)



Source: New Energy Finance, 2010. Note: Includes 4Q2009 running average.

Capital sources remain, but many are looking for the “perfect deal”

- **VC / PE**
  - Internal rounds to finance portfolio company “winners”
  - Business plans that allow for capital efficiency, i.e. “Don’t propose building billion dollar factories”
  - Investors are looking for the “perfect deal” for new external rounds
- **Project Finance**
  - Geographically driven – companies should focus on areas with strong regulatory structures, like Feed-in-Tariffs
  - PF investors are pursuing deals that “check all the boxes”
- **Government financing**
  - Massive stimulus plans provide public sector funding
  - Some downsides around government oversight structures
  - Example: DOE in the US – see following slides

Climate change outperforms the broader public equity market across all time frames

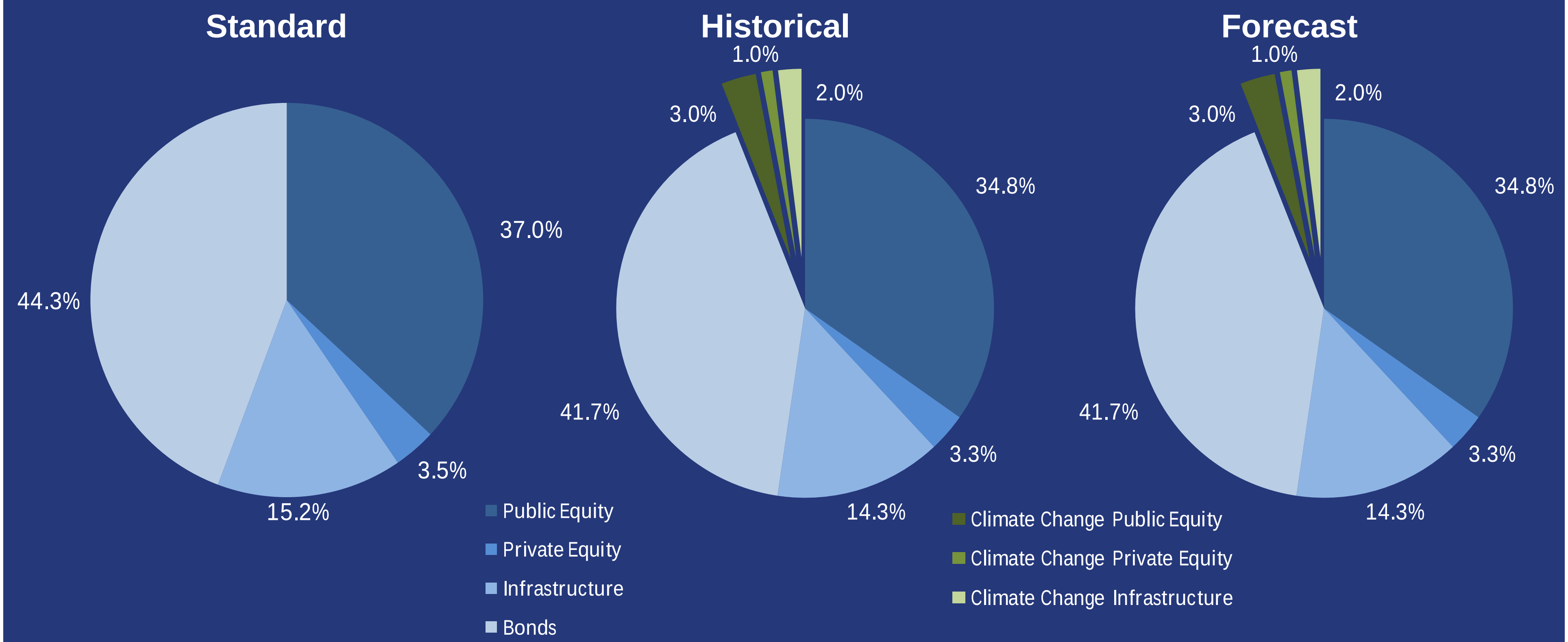
	From Market Bottom**	1 Year	3 Year
MSCI World	69.7%	27.0%	-7.1%
Global Clean Energy / Technology*	87.9%	39.7%	15.0%
Global Energy Efficiency*	125.6%	70.7%	87.2%
Global Agribusiness*	77.3%	63.6%	103.6%
Global Water*	73.6%	28.2%	15.9%

* WilderHill New Energy Global Innovation Index (NEX), CRB Research Energy Efficiency Index, DAXglobal Agribusiness Index, S&P Global Water Index

** Market bottom refers to 2009 low of MSCI World on March 9, 2009

Source: Bloomberg, CRB Research, 2010.

Model portfolio allocation with & without CC sectors



Target Portfolio Return:	Standard Portfolio without Climate Change 6.00%	Portfolio Using Historical Climate Change Returns 6.00%	Portfolio Using Forecast Climate Change Returns 6.00%
Statistical Tests			
Probability of Outperforming Target Return	**57.94%**	**59.58%**	**58.59%**
Simulated Mean Return	**8.73%**	**9.39%**	**9.11%**
Simulated Volatility	**10.76%**	**11.30%**	**11.30%**

Source: DBCCA analysis, 2010. For illustrative purposes only. Please note that simulated results have inherent limitations. The results do not represent results of actual trading using client assets, but were obtained by the retroactive application of constraint assumptions to model allocations as described herein. No representation is being made that any account will achieve profits or losses similar to those shown. These simulated results do not reflect the deduction of investment advisory fees. A client's return will be reduced by advisory fees and any other expenses that may be incurred in the management of its investment advisory account. Past performance is not guarantee of future results.

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DBCCA Climate Change Thought Leadership

Investing in Climate Change 2010: A Strategic Asset Allocation Perspective

January 2010

Infrastructure Investments in Renewable Energy

September 2009

Economic Stimulus: The Case for "Green" Infrastructure, Energy Security and "Green" Jobs

November 2008

Paying for Renewable Energy: TLC at the Right Price - Achieving Scale through Efficient Policy Design

December 2009

Investing in Agriculture: Far-Reaching Challenge, Significant Opportunity

June 2009

Investing in Climate Change 2009: Necessity and Opportunity in Turbulent Times

October 2008

Global Climate Change Policy Tracker: An Investor's Assessment

October 2009

Global Climate Change Regulation Policy Developments: July 2008-February 2009

February 2009

Investing In Climate Change: An Asset Management Perspective

October 2007

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