



## Electric Utilities – Understanding their Carbon Risk

April 29, 2009

## Today's Speakers

- Brian Rice, *Investment Officer, California State Teachers' Retirement System*
- Paul Dickinson, *Chief Executive Officer, Carbon Disclosure Project*
- Yolanda Pagano, *Director, Climate Strategy & Programs, Exelon Corporation*
- Megan Good, *Senior Analyst, RiskMetrics Group*

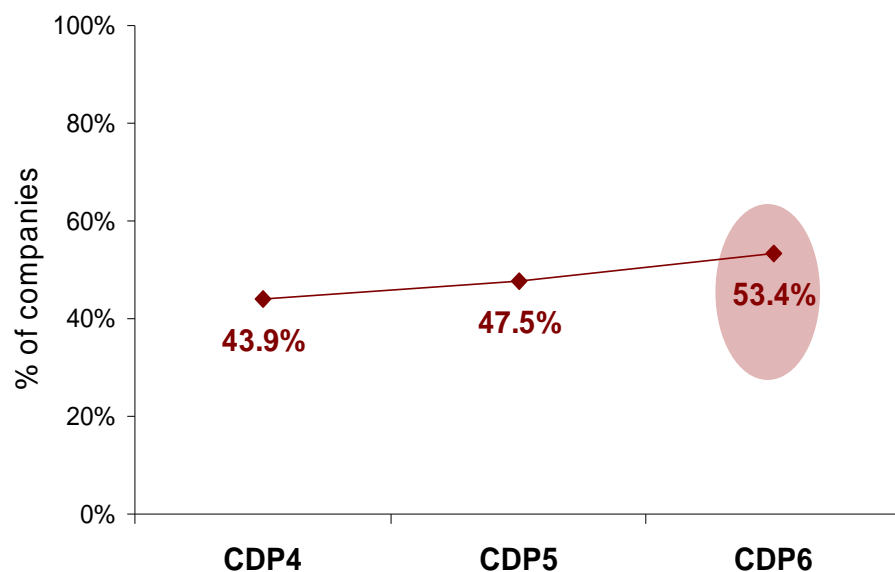


Carbon Disclosure Project  
Electric Utilities 2009 Report

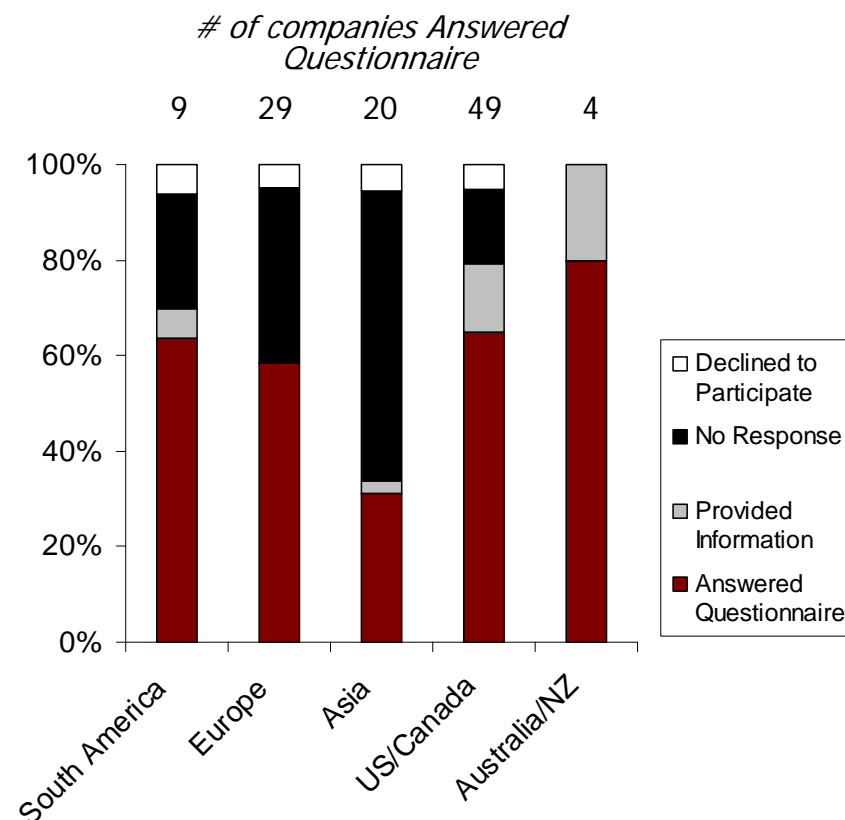
Key Findings

# CDP6 Electric Utilities Response Rates

- Response rate improved in 2008 to 53%
- The response rate for US companies increased from 48% in 2006 to 67% in 2008



Overall response rate trend: 2006 - 2008

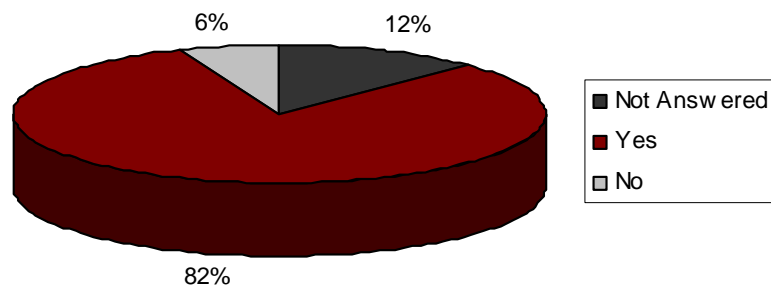


# Key Takeaways

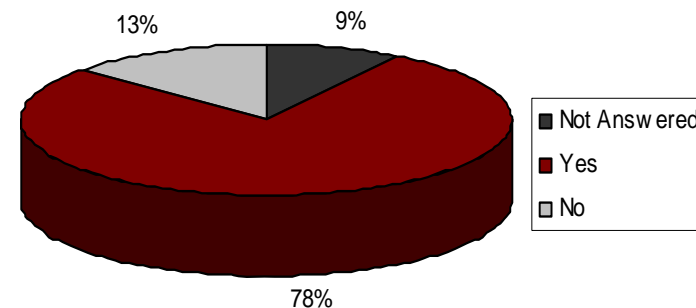
- While the response rate has improved, only a small number of responding utilities – 15% – are setting and disclosing absolute targets for reducing GHG emissions.
- 61% of respondents say they are forecasting future GHG emissions, but only 12 respondents provided actual projected emissions figures.
- Only 14 out of the 110 respondents provided data on forecasted capacity and production by fuel type, which is a critical factor for investor analysis of potential cost exposure under climate regulatory schemes.
- Acting now to plan for the future is essential as existing power plants relying on coal and other carbon-emitting fuels will lock in a flow of greenhouse gases for many decades.
- Policies that put a price on carbon, slow electricity demand growth and encourage faster replacement of high-emitting plants with lower-emitting and renewable energy alternatives will be critical.

# Climate as a Risk Management Issue

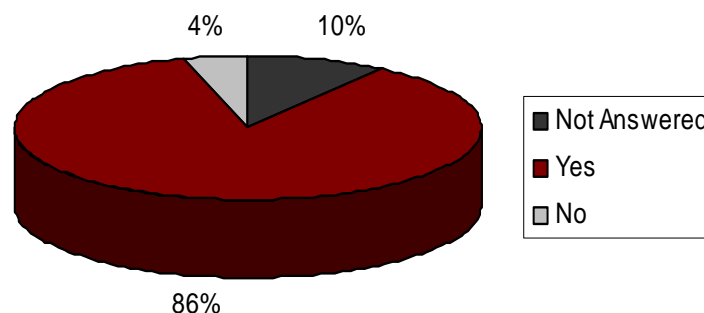
Is your company exposed to **regulatory risks** from climate change?



Is your company exposed to **physical risks** from climate change?



Do current or anticipated regulatory requirements on climate change offer **opportunities** for your company?

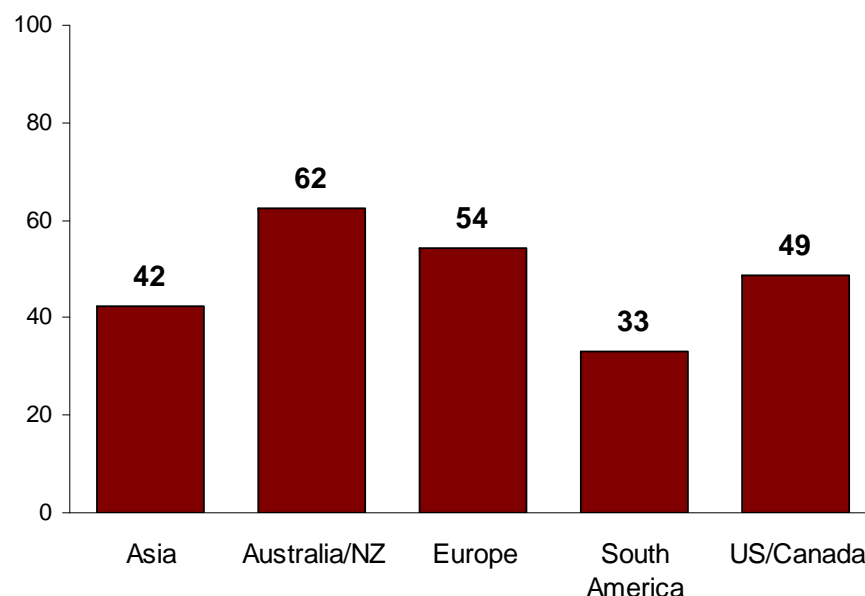


# Carbon Disclosure Leadership Index

- Measures best practice in CDP disclosure
- Scores rate the extent and quality of CDP6 responses ranging from 0 to 100

Company	CDLI Score
Endesa	85
Iberdrola	82
AGL Energy	81
CLP Holdings	79
Scottish & Southern Energy	78
Exelon Corporation	78
FPL Group	77
Canadian Hydro Developers	75
Consolidated Edison	75
NiSource	74
Fortum	74
Centrica	74

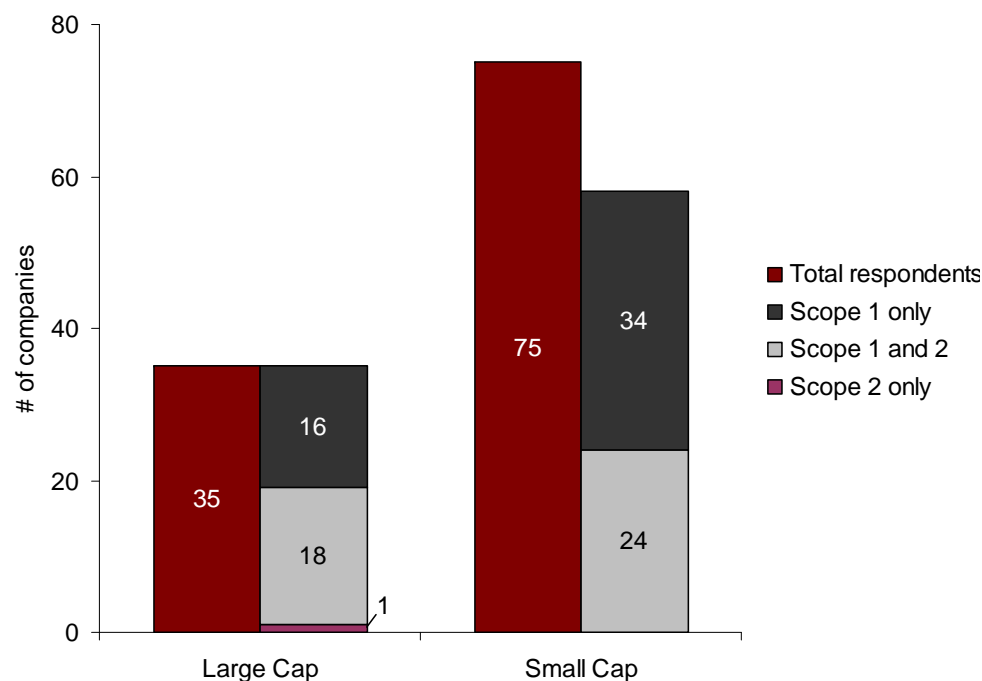
Top Scorers



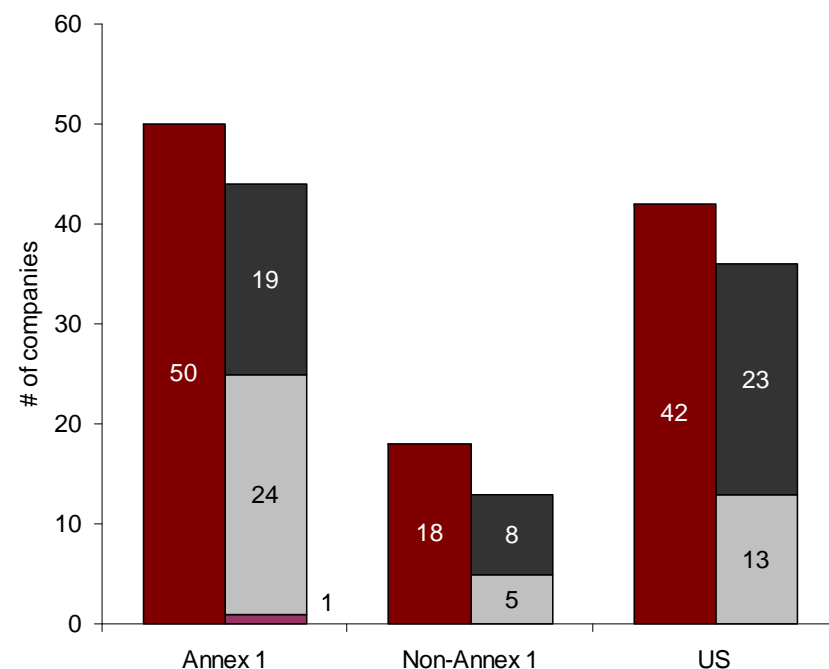
Average Scores by Region

# Quantitative Emissions Reporting

- 85% of all respondents are reporting quantitative emissions
- Annex 1 utilities had the highest rate of emissions disclosure - 88%
- All large cap utilities provided quantitative emissions data



Quantitative Emissions Reporting by Company Size



Quantitative Emissions Reporting by Kyoto Status



# Emissions Intensity

Region	Highest Emissions Intensity (CO <sub>2</sub> e/US \$ Million Turnover)	Lowest Emissions Intensity (CO <sub>2</sub> e/US \$ Million Turnover)
Asia	Korea Electric Power	CLP Holdings
Australia/New Zealand	Contact Energy Ltd.	Energy Developments Ltd.
Europe	Actelios SpA*	ACEA SpA
United States/Canada	Canadian Hydro Developers	TransAlta Corp.

Company	Emissions Intensity (Mt CO <sub>2</sub> e/MWh)
Entergy Corporation	0.28
FPL Group, Inc.	0.35
Endesa	0.44
EVN AG	0.44
Union Fenosa SA	0.47
E.ON AG	0.50
Duke Energy Corp.	0.61
Hong Kong Electric Holdings Ltd.	0.74
DTE Energy Co.	0.79
Pepco Holdings, Inc.	0.84
RWE	0.86
Emera Inc	0.87
TransAlta Corp.	0.88
American Electric Power	0.88

- 90% of European respondents provided emissions intensity data
- 47 utilities reported Scope 1 emissions intensity by revenue
- Wide range of reported emissions intensities

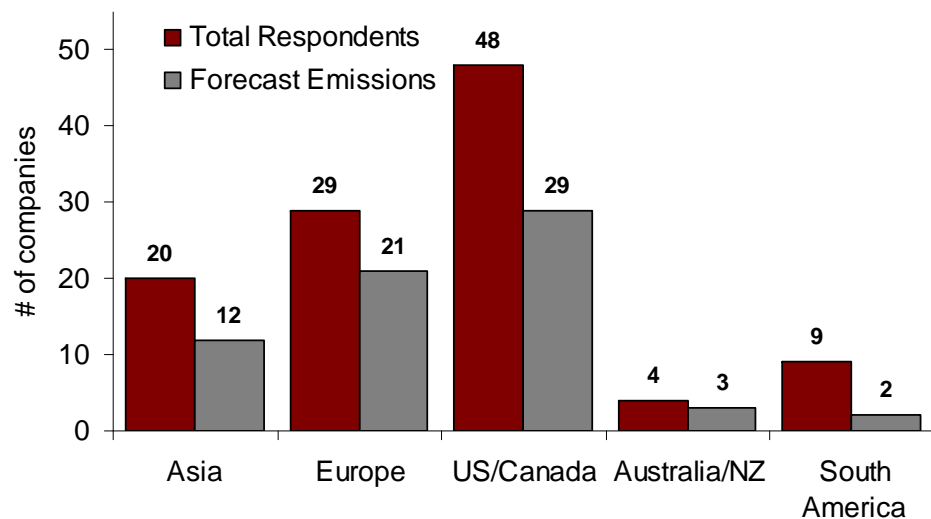
# Generation Fuel Mix

- 51 respondents disclosed current installed capacity in MW by fuel type
- Wind and solar make up a small percentage of installed capacity in all regions – with Australia/NZ and US/Canada reporting 4% average wind capacity and only AGL Energy, Endesa, ENEL, RWE and Union Fenosa reporting any solar capacity

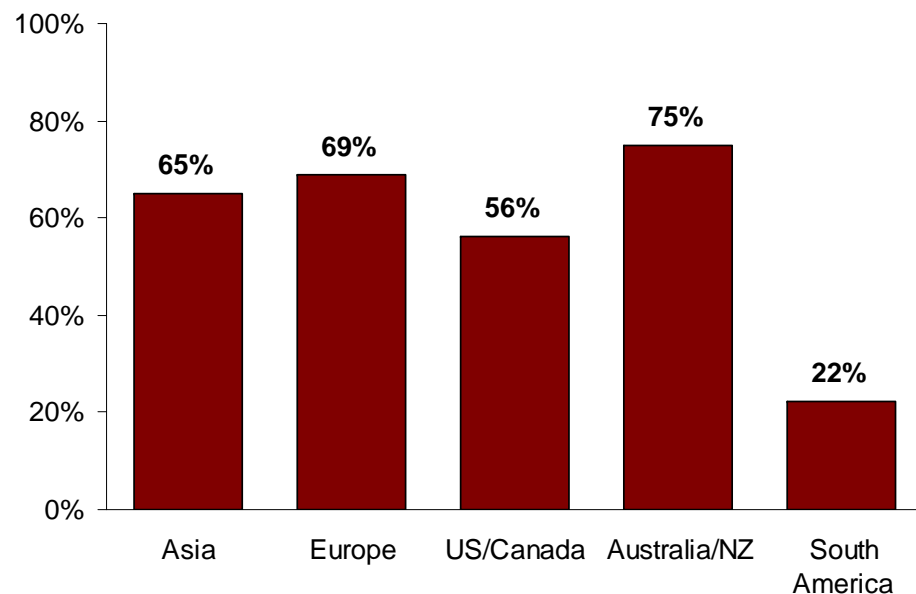
Company	Coal % of Total Reported Capacity
NiSource Inc.	81.2%
Allegheny Energy Inc.	78.2%
CLP Holdings	67.1%
American Electric Power	67.0%
Hong Kong Electric Holdings Ltd.	66.6%
DTE Energy Co.	66.5%
Integrus Energy Group	66.1%
Alliant Energy Corporation	64.8%
Ameren Corporation	61.3%
CEZ	60.1%
TransAlta Corporation	57.3%
FirstEnergy Corporation	54.8%
Emera Inc.	53.9%
Xcel Energy Inc.	52.2%
RWE	51.4%

# Emissions Management – Looking Ahead

- 61% of respondents are forecasting future GHG emissions
- Only 16 out of 110 respondents disclosed absolute emissions reduction targets
- 27 respondents disclosed emissions intensity reduction targets



Emissions Forecasting by Region



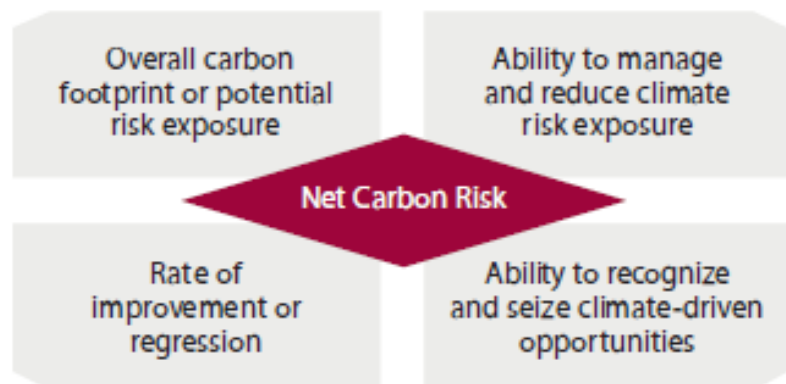
Emissions Reduction Planning by Region

# RiskMetrics Approach

## Carbon Beta™ risk analytics platform

- Assesses four key dimensions of net climate risk – not simply companies' carbon footprints;
- Addresses the regional impacts of GHG emissions on a company's cost exposure, based on local and national regulatory requirements;
- Calculates compliance cost scenarios as a percentage of EBITDA, based on company-specific carbon footprints.

Net carbon risk is defined as a function of the interaction of four key variables at the company level:



## Climate Governance tools help pension funds & asset managers

- Evaluate portfolios according to companies' climate governance practices
- Enhance engagement efforts by leveraging underlying data on corporate policies and emissions reduction strategies
- Execute the 2008 Investor Network on Climate Risk (INCR) Action Plan

RiskMetrics Climate Change Governance Framework	
Element	Weight
Board Oversight	12%
Management Execution	16%
Public Disclosure	14%
Emissions Accounting	20%
Strategic Planning & Performance	38%

# Questions?



**RiskMetrics Group**  
The Center for the Financial Community

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