From Silos to Systems: Issues in Clean Energy and Climate Change

A report on the work of the REIL Network, 2008-2010

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YALE SCHOOL OF FORESTRY & ENVIRONMENTAL STUDIES 2010
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YALE SCHOOL OF FORESTRY & ENVIRONMENTAL STUDIES
Dedication

Ms. Janet Hall, who passed away in late January 2009, was an early supporter and contributor to the REIL Network. Ms. Hall, a former U.S. Foreign Service Officer, Vice President at Westinghouse Corporation, and Counselor to the U.S. Trade Representative, spent much of her professional career immersed in the policy issues that influenced economic development strategies, energy use – both conventional and renewable, and international trade. As a Senior Policy Advisor to the International Bioenergy Initiative at the United Nations Foundation, Janet was a tireless advocate for bringing solutions to people with problems. Janet knew the power of contacts and engagement among a variety of people – in fact, she recognized that “network” was a verb long before the IT revolution – and that revolution only brought her in closer contact with people she knew who could share ideas, policy perspectives and best practices anywhere in the world. Engaging in the REIL Network was an early priority for her, and it has led to any number of formal and informal sessions that have produced new insights and highlighted best practices among a variety of players in this transformative international dialogue. All of us who knew her miss her wit, cogent insights, and guidance very much – and for that reason we are dedicating this volume to her memory.

Melinda Kimble, United Nations Foundation
Preface

Brad Gentry observed a few years ago that we by design do not attempt to fit our work to a pre-existing structure or paradigm but rather let the purpose and form “magically evolve as we do this dance of a network....”

So far, we feel, the intention has worked and allowed for outcomes we could not have planned in advance.

This year, therefore, we decided to have the volume reflect both the diversity of our eclectic band and its cohesion. This volume is meant as a forum for the ongoing expression of the individual thoughts of the members – but also hopes to be a reflection of the content of the group mind.

To express the varying forms of output, we divided the book into 4 sections:
1) essays and thought pieces by REIL; 2) analyses we requested of our own members; 3) analyses contracted by external organizations; and 4) pieces written by group members for other publications. All the opinions expressed herein reflect only those of the authors. Furthermore, REIL members belong to the group as individuals and not as representing any organization or entity.

I am incredibly grateful for the members of the group, for the fact that we get to work together and for the work we do together.

It means a great deal to me to dedicate this volume to one of the first members of our group, Janet Hall. I met her in 2005 at a hearing of the International Trade Commission. We were instant colleagues and friends! To a lovely, kind, thoughtful woman, whom we all miss very much. Her energy and spirit will always be part of REIL and our work.

Leslie

Leslie Parker
Director, REIL
Foreword

Brad Gentry, Director, Yale Center for Business and the Environment
James Cameron, Founder and Vice Chairman, Climate Change Capital
Leslie Parker, Managing Director, REIL
Martijn Wilder, Partner, Head of Global Climate
Rachel Maxwell, Deputy Director, REIL
Richard Saines, Partner, Head of North American Practice, Global Climate
Change and Environmental Markets Practice, Baker & McKenzie

To the participants of REIL/REEEP/Yale Roundtables and to the Governing Board of REEEP and to REIL:

This publication is a further compilation of much of the work REIL has done to date focusing on clean energy and climate change law, policy, and finance. REIL arose out of a “think piece” for the IEA Renewable Energy Working Party, in the run-up to the September 2002 World Summit on Sustainable Development – at which Prime Minister Tony Blair launched REEEP.

The past year, 2009, has seen a continued concerted focus on stimulus and private investment in clean energy despite the economic downturn. It saw further public finance and development of domestic laws to drive investment in renewable energy with many countries now endorsing industry development through government-backed measures that include, among others, feed-in tariffs, government loans and grants and renewable energy targets. This past year ended on a somewhat muted note with the achievement of the Copenhagen Accord – a modest, albeit important step forward, which for the first time establishes specific targets for major developing and developed countries and a desired objective to limit global temperature rise to below 2 degrees Celsius. Whether Copenhagen will ultimately be viewed as a watershed moment is yet to be determined. However it is clear that Copenhagen and its aftermath will impact the future strategies for growth of the global renewable energy markets. The success and failure of Copenhagen presents an important opportunity to the climate change and clean energy community, as it reflects on what remain and will be the best ways to catalyze the low carbon economy going forward – building on work being done on all levels – international, regional, national, subnational, and local. The challenges of achieving global consensus on this point highlight the
imperative to ensure that any policies that are adopted at any level of government align with and leverage off of economic realities. 2009 has reminded us that the long-term, sustained financing toward scaled low-carbon solutions will be achieved only if it is underpinned by clear, long-term and economically robust policy systems. The policies and actions that make clean energy development the rational economic decision are going to be the ones that deliver the scale needed to solve the climate problem.

This Yale publication and our Roundtables are outputs of REIL’s mission to both provide content for and to foster the dialogue between these various allies, to help stakeholders move from silos to systems in order to accelerate the international shift to clean energy.

As we have said before, we are very grateful to have all of you as our partners in what has been a rewarding and fun endeavor to date. We look forward to continuing to work with you and thank you sincerely for both the keen insights and thoughtfulness that you have brought to the table!

Sincerely,

Leslie, Martijn, Rick, James, Brad, Rachel

“The currents and eddies of right and wrong, I can’t navigate. I’m no voyager. But in the thickets of the law, there I am a forester. . . . This country’s planted thick with laws . . . and if you cut them down, d’you really think you could stand upright in the winds that would blow then?”

— Thomas More on the importance of the rule of law in Robert Bolt’s play, A Man for All Seasons
Acknowledgements

The REIL Network would like to gratefuly acknowledge our associates: the Renewable Energy and Energy Efficiency Partnership (REEEP), the Yale Center for Business & the Environment, the Yale Project on Climate Change, the Yale Center for Environmental Law & Policy, Baker & McKenzie’s Global Climate Change and Environmental Markets Practice, and Climate Change Capital.

We would very much like to thank our partners for the annual REIL/REEEP/Yale Roundtables on Clean Energy and Climate Change Law and Policy held at the Yale School of Forestry & Environmental Studies beginning in 2006 – the UN Foundation, the Blue Moon Fund, the Wege Foundation, the German Marshall Fund, SymbiOCycles, the Australian Greenhouse Office, and the Doris Duke Charitable Trust – for their material and nonmaterial support. Also, of course, our thanks to Jane Coppock, editor of the Yale School of Forestry & Environmental Studies Publication Series, and Dorothy Scott, who does page layout, without whom this report would not be possible! And our core team and editors: Martijn Wilder, Brad Gentry, James Cameron, Rick Saines, our Deputy Director, Rachel Maxwell, and all of our authors. Thanks to all for their very hard work, great ideas, and dedication to REIL and to the Yale events!

Leslie Parker, Managing Director, REIL
I.

*Essays written for this volume*
Introduction

Mark Nicholls
Editor, Environmental Finance

How different things look in 2010 for renewable energy advocates. Last year, in the run-up to the Copenhagen climate talks, hopes were high that the world was approaching a tipping point. As momentum built ahead of the ‘make-or-break’ negotiations, many argued that progress towards an ambitious post-2012 international climate change agreement would drive dramatic investment into renewable energy and other low-carbon technologies.

Enough ink has been spilt about those two fractious – and profoundly disappointing – weeks for me not to need to rehearse the arguments here. Suffice to say, the conclusion of a legally binding global treaty to extend or replace the Kyoto Protocol looks as far off now as at the conclusion of the Copenhagen talks. Negotiators are already playing down expectations for the next set of negotiations, to take place in Cancún, Mexico, in December.

And, in sharp contrast to the second half of 2009, climate change has slipped significantly down the global agenda. It is perhaps inevitable that the intense media interest ahead of Copenhagen could not be sustained, but the issue’s prominence has also suffered from the ‘Climategate’ controversy, where climate change sceptics have seized upon leaked emails to claim that climate change scientists have misled their peers and the public about the degree of global warming that can be observed.

Furthermore, with the industrialised world struggling to emerge from the greatest economic convulsion since the Second World War, it is proving difficult to make the case for generous government support for low-carbon technologies. All this is conspiring to generate significant headwinds for those seeking to promote renewable energy around the globe.

But while those in the climate change and clean energy communities may not be basking at the centre of the world’s attention this year, as last, the outlook for renewable energy and low-carbon development is not as grim as many suppose.

For a start, as many commentators have noted, Copenhagen could have been judged a success before the first negotiator set foot in the city’s Bella Centre. The lead-up to the talks generated unprecedented policy development, especially in the major fast-developing economies where, frankly, the battle against climate change will be
won or lost. China and India, especially, have introduced far-reaching climate change policies, with significant targets for increasing renewable energy penetration and improving energy efficiency.

Second, commitments among most industrialised economies remain intact. While the EU did not feel able to move from a 20 percent greenhouse gas reduction target to a 30 percent target – as it had promised to do if other industrialised countries made similarly ambitious pledges – it has stuck to its stretching 2007 climate and energy package. There has been surprisingly little push-back at the policy level against the additional costs that are likely to be incurred by the EU’s 2020 renewable energy targets.

Third, the more optimistic commentators are becoming more positive about the Copenhagen Accord. Many initially decried it as a toothless, voluntary agreement that fell outside the formal UN negotiating process. However, hopes are growing that it could prove a useful vehicle to break down the Kyoto barriers between industrialised signatories and the developing world.

Moreover, many observers are coming to the conclusion that a comprehensive, top-down agreement along the lines of the Kyoto Protocol may prove to be impossible: the implications for energy use and economic development implied by a serious effort to control climate change may mean the stakes are simply too high for a UN process to handle.

Nonetheless, and if you’ll pardon the pun, some of the heat has undoubtedly gone out of the climate change debate. In certain respects, that will make the job harder for some, in terms of garnering the attention of time-poor policy-makers, or the investment dollars of agnostic investors.

In other respects, however, it’s business as usual. Investment will continue to flow – but at a lower and more considered velocity. Policy will continue to be made, and – and this is where the REIL network’s value is especially to be found – an enormous amount of the detail still needs to be elaborated.

Despite the fads and fancies of the world’s media, the hysteria of the climate change sceptics, and today’s relative lack of lip-service from politicians, climate change is not going away as an issue, and renewable energy’s growing role in the world’s energy mix is assured.

Indeed, the post-Copenhagen comedown has one clear outcome. The debate around the low-carbon economy has returned to being an argument much more about economics, rather than environmentalism and ethics. What will drive policy and investment over the next few years will be concerns over capturing the low-carbon economy, rather than saving the world.
Lisa Alejandro is a Lead International Trade Analyst at the United States International Trade Commission. She analyzes trade in services, with particular emphasis on renewable energy and financial services. Ms. Alejandro orchestrated a report that examined U.S. and foreign markets for renewable energy services (USITC publication Renewable Energy Services: An Examination of U.S. and Foreign Markets), and is currently working on a study assessing the global competitiveness of U.S. solar and wind power service providers. She has written on several other environmental services topics (USITC publications Solid and Hazardous Waste Management Services: An Examination of U.S. and Foreign Markets; Remediation Services: An Examination of U.S. and Foreign Markets; and Air and Noise Pollution Abatement Services: An Examination of U.S. and Foreign Markets), as well as on banking and securities services in numerous markets including China, Malaysia, Korea, India, Panama, Morocco. Ms. Alejandro holds a Bachelors degree in English and a Masters degree in International Trade from George Mason University. Prior to working for the U.S. International Trade Commission, she conducted trade development assistance in the Balkans as a consultant with Booz Allen & Hamilton.

James Cameron is an Executive Director and Climate Change Capital’s (CCC) Vice Chairman. He is responsible for strategic and sector development and represents the firm at the highest levels of business and government.

He is a pre-eminent expert in developing policy responses to climate change. Prior to CCC he was Counsel to Baker & McKenzie and was the founder and the head of their Climate Change Practice. He has spent much of his legal career working on climate change matters, including negotiating the UNFCCC and Kyoto Protocol as an adviser to the Alliance of Small Island States. He has held academic positions at Cambridge, London, Bruges and Sydney and is currently affiliated with the Yale Centre for Environmental Law and Policy. As a barrister he appeared in several of the leading cases in environmental law.

Mr. Cameron is Chairman and a Trustee Member of the Carbon Disclosure Project, Chairman of China Dialogue, a Board Member of the Worldwatch Institute, a treasurer of REEEP, a member of Oxfam’s development board and a Senior Advisor to The Climate Group. He is a member of the board of GE Ecomagination, a member of the
Copenhagen Climate Council, a member of the development board of the Smith School and a member of the World Economic Forum’s Climate Council.

Paul Curnow is one of the world’s leading legal experts on climate change, having specialised since 2000 in carbon, renewables, and environmental markets. He advises government, multilateral and private sector clients on domestic and international climate and renewable energy regulation and policy, cross-border project development and financing under the Kyoto Protocol and domestic and regional trading schemes, and structured carbon financing deals in OTC and exchange-traded markets. Between 2001 and 2004 he was an international climate change negotiator with the Australian Government (as part of the Australian Greenhouse Office). A partner with Baker & McKenzie since 2007, he is a Visiting Fellow in Environmental Markets at the University of New South Wales and Chair of the Australian Working Group, Carbon Markets & Investors Association (CMIA).

Paul Curnow has a masters degree in Public Policy and Environmental Law from the Australian National University, where he also obtained his LLB and BA. He has published widely in climate change law including as co-editor of Implementing CDM Projects: A Guidebook to Host Country Legal Issues, and editor of the CDM and JI Rulebooks.

Henry Derwent became the President and CEO of the International Emissions Trading Association (IETA) in February 2008. Previously, as international climate change Director for the UK Government, he oversaw the UK’s role in the international negotiations, in the G8 (especially as Prime Minister’s special representative during the UK G8 Presidency in 2005) and in other forums. He has been closely associated with the development of greenhouse gas trading in the UK and Europe from its earliest days. He previously had responsibilities for all aspects of climate change and sustainable energy in the UK as well as air quality and industrial pollution control. Before that, he was an international corporate finance executive at a major investment bank.

Bradford Gentry is the Director of the Yale Center for Business and the Environment, as well as a Senior Lecturer and Research Scholar at the Yale School of Forestry & Environmental Studies. Trained as a biologist and a lawyer, his work focuses on strengthening the links between private investment and improved environmental performance. He is also an advisor to GE, Baker & McKenzie, Suez Environnement and the UN Climate Secretariat, as well as a member of Working Lands Investment Partners and Board Chair for the Cary Institute of Ecosystem Studies. He received his B.A. from Swarthmore College (Phi Beta Kappa) in 1977 and his J.D. from Harvard Law School (Magna Cum Laude) in 1981.

Colin High is the Chairman and co-founder of Resource Systems Group, Inc, an energy environment and transportation consulting firm based in White River Junction, Vermont. He is the leader of RSG’s climate and energy group and specializes
in lifecycle air emissions modeling in the electric power sector. He has worked on a wide range of projects in the environment and energy fields including renewable energy, energy efficiency, and carbon accounting.

Dr. High holds a PhD in Geography and Earth Sciences from the University of Bristol in England and for many years taught environmental science at Dartmouth College, Columbia University and the University of Ibadan in Nigeria. He also helped develop environmental foreign study programs in Kenya and in Russia.

Debra Jacobson is Co-Director of the Solar Institute at The George Washington University (GW), a Research Professor of Energy at GW, and a Professorial Lecturer in Energy Law at GW Law School. Since 2001, she also has served as the owner and principal of DJ Consulting LLC, a consulting firm specializing in energy and environmental issues.

She has worked on issues involving energy and environmental law and policy for more than 30 years, including senior staff positions in the U.S. House of Representatives and the U.S. Department of Energy. She currently serves on the Strategy Committee for the Department of Energy’s Wind Powering America Program, as an Advisor to the Renewable Energy and International Law Project, and was a member of the founding Board of Directors of the Women’s Council on Energy and the Environment in Washington, D.C. She received her B.A. in Environmental Studies from the University of Rochester and her law degree from GW Law School.

Sean P. Jamieson is an energy attorney with the law firm, Van Ness Feldman, P.C., where he primarily provides counsel to clients on matters relating to natural gas, electricity, transportation, and energy policy. He has previously worked in a legal capacity at Squire Sanders & Dempsey LLP, and as a law clerk to Commissioner Irving A. Williamson of the U.S. International Trade Commission.

Prior to law school, he worked as a corporate governance management consultant at a Washington, DC-based consulting firm, in an advisory role for a national brand media campaign, and also as an intern at the United Nations headquarters in New York. He holds a bachelor’s degree from The George Washington University, where he was a presidential academic scholar. He received his juris doctor degree from Howard University School of Law and resides in Washington, DC.

Richard L. Kauffman recently stepped down as the Chief Executive Officer of Good Energies, since 2007 having built it during that time into one of the largest investors in renewable energy. He led $750MM in equity investments in over 30 renewable energy technology companies and solar and wind project developments. He also served on the board of Q-Cells, one of the world’s largest producers of solar cells.

He currently serves as Chairman of the Board of Levi Strauss and was previously a Partner of Goldman Sachs, where he was chairman of the Global Financing Group, a member of the firm’s Partnership Committee, Commitments Committee, and Investment Banking Division Operating Committee. Before joining Goldman Sachs,
he was vice chairman of Morgan Stanley’s Institutional Securities Business and co-head of its Banking Department.

He is a member of the board of The Brookings Institution, the Yale School of Management Board of Advisors, and Co-Chairman of the Advisory Board of the Yale Center for Business and the Environment. He is a member of the Council on Foreign Relations.

Melinda Kimble is a senior vice president at the United Nations Foundation, and oversees their International Bioenergy Initiative. She joined the UN Foundation in May 2000 as Vice President for Programs and worked to develop Foundation partnership programs in the areas of Children’s Health; Energy & Climate Change; Biodiversity; Peace, Security, and Human Rights; and Women’s Health. Prior to the Foundation, Ms. Kimble served as a state department foreign service officer, attaining the rank of minister-counselor. She served in policy-level positions in the Bureau of Economic and Business Affairs, overseeing multilateral development issues and debt policy and in the Bureau of Oceans, International Environment and Scientific Affairs (OES), leading environmental negotiations.

She has served or is serving on several key international boards and commissions, including the Board of International Science Organizations for the National Academy of Sciences, the U.S. National Commission for UNESCO and the Regional Environment Center for Central and Eastern Europe (REC). She also serves as an adjunct professor at the Maxwell School of Syracuse University. She speaks French and Arabic and holds two master’s degrees: Economics (University of Denver) and MPA (Harvard’s Kennedy School of Government).

Rachel Maxwell is the Deputy Director of REIL. She joined REIL in 2005. Rachel worked as the Vice President of Maxwell Statistics from 2000 to 2005 and as an Independent Education and Administration Consultant. She has worked on analysis projects for various organizations, from Microsoft and Xerox to the Early Learning Center of Snohomish, WA. Ms. Maxwell has extensive experience as an independent editor. She was co-editor of, From Debate to Design: Issues in Clean Energy and Climate Change Law and Policy A report on the work of the REIL Network 2007-2008. She earned her bachelors degree from Bryn Mawr College and is currently working on an MBA in Sustainable Business at the Bainbridge Graduate Institute.

Mark Nicholls is editor of Environmental Finance magazine, which covers the growing relevance of environmental and social issues to the financial community and its corporate clients. Launched in 1999, Environmental Finance specialises in coverage of emerging markets in environmental goods – such as greenhouse gas emissions allowances and renewable energy certificates. It also covers socially responsible investment, corporate social responsibility, renewables financing and weather derivatives. He is also editor of Carbon Finance, a specialist newsletter focusing on carbon trading, greenhouse gas emissions management, and the impact of climate policies on business and finance.
Over the last nine years, he has developed a particular specialty in business and policy responses to climate change, specifically in the emerging carbon markets created by, or linked to, the Kyoto Protocol. In 2000, he was named Socially Responsible Investment Journalist of the Year (trade press), in an award sponsored by Friends Provident. Prior to co-founding *Environmental Finance*, he was the Hong Kong-based Asia editor for *Risk* magazine, which is the leading financial derivatives and risk management publication. He has a degree in politics from Durham University and a master’s degree in European Politics and Policy from the London School of Economics.

**Robert Nordhaus** is a member of the Washington, DC law firm of Van Ness Feldman, P.C., where he specializes in energy and environmental regulation. He also serves on the adjunct faculty of the George Washington University Law School. He originally joined Van Ness Feldman in 1981, after serving three years as the Federal Energy Regulatory Commission’s first General Counsel. He practiced with the firm until 1993, when he was appointed General Counsel of the Department of Energy by President Clinton. He rejoined the firm in 1997. In 1977, prior to his service at FERC, he was a member of the Energy Policy and Planning Office in the Carter White House. In 1975 and 1976, he was counsel to the House Interstate and Foreign Commerce Committee, and from 1963 to 1974, he served in the House Legislative Counsel’s Office. He is a graduate of Stanford University and Yale Law School and a member of the New Mexico, District of Columbia and Supreme Court bars.

**Leslie Parker** is the founder and managing director of REIL (Renewable Energy and International Law), an international policy and law network for clean energy, in association with the Renewable Energy and Energy Efficiency Partnership, the Yale Center for Environmental Law and Policy, the Yale Center for Business and the Environment, and Baker & McKenzie’s Global Clean Energy and Climate Change Practice. REIL is a network of policy makers, business and finance, thought leaders, lawyers, and technical experts, addressing policy and law and technical issues arising in the mainstreaming of clean energy and the development of the clean energy market. REIL was founded in 2003 from a 2002 initiative of the International Energy Agency’s (IEA) Renewable Energy Unit where she interned. Prior to that she held various posts in New York City government, notably, as division director in the Finance office of the Department of Social Services where she was responsible for developing and enhancing City revenue and working with the Mayor’s Office on the agency’s 12 billion dollar budget, and as an Assistant Director of the budget at the Administration for Children’s Services where she oversaw 1.2 billion dollars of the NYC city budget. She has a Masters in Art History, and worked for 11 years at the Metropolitan Museum of Art, including seven in the Department of European Sculpture and Decorative arts. She attended Bryn Mawr College and New York University.

**Richard Saines** heads the North American Climate Change and Environmental Markets Practice at Baker & McKenzie. He is widely published and globally recognized as a leading climate change lawyer, bringing over a decade of experience
on climate change law matters advising multinational companies, financial institutions, funds and project sponsors on carbon and environmental market transactions within the international, regional and voluntary markets. He also advises major global corporations on climate change policy, sustainable development and global corporate greenhouse gas compliance and management. He is recognized by Chambers USA and Chambers Global as a leading climate change lawyer.

Paul Savage is the CEO of Nextek Power Systems, where he is the architect of the company’s IP, financial, and partnering strategy. He is also a Founding Governing Member of the Emerge Alliance Corporation, a current Member of the Clinton Global Initiative, and a member of the Board of Directors of Winrock International, a non-profit entity that seeks to advance and improve the lives of people around the world. His experience includes Bond Trading at CS First Boston and risk management at Lehman Brothers before joining the start-up operations of Caterpillar’s dealership in Vietnam filling 2 roles as the Director of Customer Finance and Marketing. He helped grow this green-field start-up to 87 employees, 5 offices and $22 million in sales in 2 years. He graduated from Haverford College with a Philosophy degree in 1983.

Martijn Wilder is head of the Baker & McKenzie’s Global Environmental Markets (Climate Change) practice. He is regarded as a legal pioneer in the development of legal mechanisms and regulations underpinning the emergence of international carbon markets. He has been ranked as one of the leading climate change lawyers by Chambers Global and is listed among the best lawyers in his field by Best Lawyers Australia 2009. He founded serves as chair and/or board member of numerous climate change and emissions trading advisory groups and taskforces, including the International Renewable Energy and Energy Efficiency Partnership (REEEP), the Carbon Trust (Australia) and the NSW Carbon Markets Taskforce. Martijn is also a Professor of Climate Change Law at the Australian National University.

Mr. Wilder has advised governments and international agencies on the development and design of climate change and emissions trading laws, the building of market infrastructure and the procurement of carbon assets. He regularly works on international carbon transactions and has advised on a broad range of investments and fund raisings in, and the establishment of funds for the broader environmental markets areas. He continues to be a key adviser to governments and clients on post-2012 carbon markets and funds and the development of polices and transactions in relation to reducing emission from deforestation and degradation (REDD++). He has honours degrees in both Economics and Law and a LLM (Master of Laws) from the University of Cambridge where he studied as a Commonwealth Trust Scholar. He has published widely in the climate change and international law area.