

Pace Energy and Climate Center

2015 Annual Report

In 2015, Pace Energy and Climate Center continued a 27-year tradition of successfully advancing clean energy policies and solutions in communities across the State of New York and the Northeast region, across the United States, and around the world. As a unique organization that operates at the boundaries between law, policy, business, and regulation, we continue to bring innovative thinking, strong analysis, technological understanding, and stakeholder engagement to the vital climate and energy challenges facing us today.

We have been pleased to become a key player in the New York Public Service Commission's Reforming the Energy Vision ("REV") initiative. REV seeks to devolve the electric utility of the future to accommodate new renewable and distributed energy resources, improve resiliency, and avoid significant increases in customer bills.

We operate with a small staff of highly capable experts, multiplied by the commitment and energy of student interns, and leveraged through a community of clean energy stakeholders. Pace identifies and understands the issues, crafts the solutions and improvements needed, and uses the tools of law and policy advocacy to change the way things are done—for the better.

In 2015, we continued and strengthened program efforts in many areas, expanded our reach and influence into new areas, and scored important victories in ensuring that clean, efficient, and renewable energy would be an increasing part of our lives, today and tomorrow. Facing the challenges of climate change up close, we design and implement solutions at the same scale—at the level of state and local policy and action—that will empower and support community initiatives wherever Pace works.

All our work is made possible by the generous support of our funders and the continued commitment of Dean David Yassky, the staff and faculty of the Pace Law School, and the entire Pace University team. Standing behind them is a strong network of Pace alumni and donors who help keep us all going. We couldn't do it without each of them!

In this Report:

Highlights & Looking Ahead	Pages 2–3
Letter from Executive Director Karl R. Rábago	Pages 4–5
Focus Area: Policy	Pages 6–8
Focus Area: Relationships	Pages 9–11
Focus Area: Technology	Pages 12–14

Pace Energy and Climate Center Highlights for 2015

- Established the Northeast Solar Energy Market Coalition, an unprecedented coalition of regional solar business associations, with support from the U.S. Department of Energy's SunShot Initiative Solar Market Pathways Program.
- Received our 12th year of funding support from the U.S. Department of Energy to lead the Northeast Combined Heat and Power Technical Assistance Partnership and provide technical assistance for expanded deployment of high-efficiency distributed energy generation systems.
- Earned renewed and expanded funding from the Energy Foundation to engage in clean energy policy and utility transformation work before the New York Public Service Commission, both on our own behalf and as leader of Clean Energy Organizations Coalition.
- Effectively led the community of public interest organizations in New York in advocacy to ensure that new market innovations, including the NY Green Bank, effectively utilize lessons from three decades of experience attacking persistent market barriers impeding private investments energy efficiency.
- Intervened as a public interest party in every New York electric utility rate case. Secured important regulatory decisions supporting clean energy development relating to the Regional Greenhouse Gas Initiative, emissions from small generators, customer charges for electric service, and collaboration on distributed energy demonstration projects.
- Established Pace as the leading academic institution engaged in the history-making New York Reforming the Energy Vision ("REV") initiative and helping to shape the future of electric service and markets in New York.
- Earned support from the John Merck Fund to establish a regional Value of Solar Center of Excellence to champion full and fair valuation and regulatory treatment for clean distributed solar energy generation.
- Launched important studies in clean energy development and energy system transformation for international audiences.

- Hosted and presented in dozens of workshops, seminars, and webinars on a wide range of clean energy topics, including microgrids, the Clean Power Plan, solar energy valuation and regulation, maritime fuel conversion, community clean energy, energy entrepreneurialism, electric vehicle charging infrastructure, equitable access to clean energy, carbon-tuning electricity resource evaluation, innovative financing for renewable energy.
- Published several important studies and reports on power plant emissions profiles, microgrids, reducing energy-related pollution in mega-cities, municipal sustainable energy initiatives, value of solar, and electric utility energy efficiency programs in New York.
- Employed and trained 19 legal interns, taught an upper level energy law course, and supported the Pace Environmental Law Program.

Looking Ahead

The year ahead bring promise of even greater things. We will focus on maximizing the clean energy transformation benefits of the New York Reforming the Energy Vision process, and on implementation of Governor Cuomo's ambitious clean energy agenda of 50% renewable energy by 2030. Utility plans and rate cases will be where these policies become reality—Pace Energy and Climate Center will be there from start to finish.

We will simultaneously build on our regional work, expanding and extending successes and networks. Our goal is to accelerating the pace of positive change through a strong action agenda.

And we will help graduate some of the best trained and experienced legal minds in the nation, ready to take up the challenges ahead.

Letter from the Executive Director, Karl R. Rábago

Dear Friends and Supporters of Pace Energy and Climate Center:

Thanks to you, our dedicated staff and interns, and all our families and friends for another great year! On December 31, 2015, I celebrated my first full year as Executive Director. In that time, I have come to appreciate the amazing organization that is the Pace Energy and Climate Center.

This has been a year of hard work, and of important progress in advancing our goal of clean energy for every community, today and tomorrow. Our team has pored over thousands of pages of regulations, laws, and comments. We have drafted, and redrafted similarly thousands of pages of analysis, commentary, summaries, and testimony of our own. Every word and every idea we have offered has been in pursuit of policy and practice that will change the way energy is produced and used and the way that businesses in the energy sector operate, and that will set us on a course to a truly sustainable energy future. It is great work; we love doing it.

This past year has us welcoming two great new additions to our permanent staff. Radina Valova, a Pace law alum with her undergraduate degree in Psychology from UCLA, and both her J.D. and LL.M. from Pace, now serves as a Staff Attorney and Energy and Climate Advisor. Pearl Gray is a new Energy Policy Analyst with degrees in Marine Operations and Technologies (she has served on merchant ships!), and in Environmental Science and Policy, from the U.S. Merchant Marine Academy and Columbia University respectively.

Sadly, we bid farewell to John Bowie, another Pace alum, who moved to California with his new wife. We thank John for all his hard work and good cheer!

I want to extend a special thanks to Loretta Musial and Mary Cataneo, who keep the engines of the Center tuned and running smoothly at all times.

*This report is organized along three main themes that exemplify how we work. While we can't possibly report on everything that has happened over the past year, we have tried to highlight major accomplishment in **Policy, Relationships, and Technology**.*

I would like to take a minute more of your time to describe a few key thrusts in how we work at the Pace Energy and Climate Center.

First, we would not exist without the vision and guidance of Dean Richard Ottinger. Dick is in the office every day, ready to lend a word of counsel and good cheer, an active participant in our weekly docket calls, and an endless fountain of wisdom and reminders of our mission. We strive to honor his vision and great work every day.

Second, we have been working hard to strengthen and improve our law student intern program. As Dick reminds us, “our mission at the Pace Energy and Climate Center is not to save the world; our mission is to educate and prepare the people who will.” Our program is very competitive, even with 9–10 slots each semester. We think this is not only because of the great success we have in placing interns in fellowships, clerkships, and jobs, but also because we provide meaningful work at the cutting edge of clean energy policy in New York and the region. We think that a “Path to Practice,” as stated in the Pace Law School motto is exactly what the Center can provide. Our student interns are vital to our team, and we appreciate their hard work, intellect, and commitment.

Third, we have begun to expand our scope of work beyond old categories to enable us to attract new kinds of work and greater revenues. We worked with the University so that we can now bill market rates for some of our work, and we have been taking on a measured amount of direct consulting, fee for service, and expert testimony work. For example, we are legal advisors under contract to nearly 1 in 5 of the communities vying to win support funding under the NY Prize competition to develop advanced microgrid systems.

Fourth, the Pace Energy and Climate Center has strengthened the voice of clean energy organizations in New York energy and climate policy. We formed the Clean Energy Organizations Coalition to build on our long tradition of convening like-minded non-governmental organizations around a common agenda of strong action and real progress toward a clean energy future.

Finally, we are expanding the range of our strategic partnerships in order to extend our reach and capabilities, and to expand into new areas of work. For example, we have deepened our relationship with Environmental Defense Fund. EDF is a member of the Clean Energy Organizations Coalition, and participates with us in many regulatory and policy activities. Several recent and ongoing projects at Pace have actually been funded under contracts with EDF.

We are partnering with Earthjustice in two exciting areas. Earthjustice provides us with legal support in our intervention cases before the New York Public Service Commission, and exposes our interns to practicing environmental law attorneys. Earthjustice has also joined us to support the new Master of Laws (LL.M.) fellowship in Equal Access to Sustainable Energy. The “EASE Fellow” program will start in the Summer of 2016, and will support a student working to an LL.M. degree while building our capacity to effectively advance the interests of low and moderate income communities in gaining fair access to energy efficiency and clean energy of all kinds.

Thank you again for your support and for taking the time to learn about the great year that we had at Pace Energy and Climate Center in 2015. We hope we can enjoy your support in the year ahead.

Sincerely,

Karl R. Rábago

Policy, Relationships, and Technology

Policy

Reforming the Energy Vision – “REV”

New York leads the nation in the work of building the electric utility systems of the future. In the Public Service Commission’s “Reforming the Energy Vision” proceeding, launched by Governor Cuomo, and led by Energy and Finance Chair Richard Kaufman and PSC chair Audrey Zibelman, stakeholders are helping shape an agenda for utility sector transformation. The REV agenda is large and complex, embracing initiatives on renewable energy, energy efficiency, statewide goals, benefit-cost analysis, net metering, demonstration projects, and other topics. Center staff have submitted hundreds of pages of comments and feedback, alone and through our Clean Energy Organizations Coalition. We have assisted PSC staff in conducting seminars and workshops, and play a leadership role in broad-based efforts to ensure that utility transformation initiatives benefit all New Yorkers, including low and moderate income communities.

Rate Cases

Unique among non-governmental organizations, we have leveraged our special understanding of regulatory law and practice to ensure that rate case proceedings produce results that are in sync with REV goals. So far, we have been a party in rate cases for Central Hudson, Orange and Rockland, ConEd, New York State Electric and Gas, and Rochester Gas and Electric. We have become the leading public interest voice on issues such as fixed customer charges, Advanced Metering Infrastructure (“AMI”) and smart metering, microgrid development, energy efficiency program funding, and others. We have successfully advocated for broadly-based stakeholder collaborative efforts to ensure that demonstration projects are meaningful and that utilities are accountable for progress against performance metrics. Our ideas are shaping utility business plans across the state of New York.

Large Scale Renewables

Building on New York's clean power legacy, NYSERDA has proposed strategies to attract investment and spur development of clean, stable power in the form of large-scale renewables. A new and improved Large Scale Renewable program is paramount to achieving these goals, as well as complying with New York's upcoming GHG requirements under the U.S. Environmental Protection's Agency's recently released Clean Power Plan. The Center and its Coalition partners submitted comments on the proposed plan. Every dollar invested in the Renewable Portfolio Standard remains in New York, helping to reduce the amount New Yorkers are currently sending out of state for economy-wide energy costs, estimated to be nearly \$39 billion in 2012. The Public Service Commission has included many of our previous comments into the most recent version of the clean energy standard. The continuation of large-scale renewable energy investment programs can ensure New York stays on track to meet its ambitious environmental and clean

energy goals, achieve the goals of REV, and promote economic development across the Empire State.

Small DG Emissions Rule (6 NYCRR Part 222)

In December 2015, New York's Department of Environmental Conservation (NY DEC) announced the release of a long-awaited regulation that will reduce harmful air pollution from small diesel and other fossil-fueled distributed generators, thanks in part to a continued push by the Center and our allies. The proposed regulation, 6 NYCRR Part 222, covers nitrous oxide and particulates, which cause sometimes severe respiratory problems, and fills a critical gap in existing emissions regulations. We continue to engage in this evolving regulation and are preparing public comments for filing in February 2016 to ensure that the rule is as effective as possible in reducing harmful emissions.

Clean Power Plan / Regional Greenhouse Gas Initiative

We published a paper on modifications the nine states participating in the Regional Greenhouse Gas Initiative (RGGI) should make to ensure

compliance with the U.S. Environmental Protection Agency's landmark Clean Power Plan, as well as reach their own ambitious economy-wide climate pollution reduction goals. Called the [Clean Power Plan Puzzle](#), the paper finds that the overall RGGI cap is lower than EPA's final mandates, but that the RGGI states should reduce the cap by at least 2.5% per year to ensure that they achieve their overall climate pollution reduction goals.

Executive Director Karl R. Rábago filed a declaration before the U.S. Circuit Court of Appeal for the District of Columbia in support of environmental organizations opposing the efforts by states seeking to prevent the implementation of the Clean Power Plan, drawing on his experience as a former Public Utility Commissioner for the state of Texas.

Expanding COP21 to include Non-National Contributions

Professor Ottinger presented this paper at the Annual Conference of the European Environmental Law Association International Conference on Climate Justice expressing the overarching need of international

governing bodies to come to an agreement during the Paris COP21 Conference.

Air pollution measurement study

Research assistants Radina Valova, Pianpian Wang, and Kristen Motel looked at the various efforts to address air pollution in Los Angeles, CA and Beijing, China for a study by Professor Wang Xi for the Shanghai Jaio Tong University.

Relationships

Reforming the Energy Vision

The Pace Energy and Climate Center convened and led the Clean Energy Organizations Collaborative (CEOC) and intervened in the Reforming the Energy Vision (REV) proceeding at the New York State Public Service Commission. Made up of national and state-based environmental organizations, clean energy companies and organizations, renewable energy industry trade associations, consumer groups, energy efficiency providers, and academic centers, the CEOC seeks to break down existing barriers to clean energy services and inform its members on market and rate design issues. The CEOC helped ensure continued funding for New York's energy efficiency programs and funding for large-scale renewable projects, and that New York's goal to obtain 50 percent of its electricity from renewable resources by 2030 became an enforceable mandate.

DOE SunShot Initiative Solar Market Pathways Program

The SunShot Initiative is a program started by the Department of Energy

(DOE) to make solar energy fully cost-competitive with traditional energy sources before the end of this decade. The Pace Energy and Climate Center teamed with solar energy business associations to submit a competitive proposal to form the [Northeast Solar Energy Market Coalition](#). The Solar Coalition will bring together solar energy business association and other stakeholders in the Northeast to harmonize regional solar energy policy and advance the solar energy market.

Selected by the DOE for three years of funding under a cooperative agreement, the Solar Coalition breaks new ground in bringing consistency and best practices to solar markets across the Northeast region. Pace manages the Solar Coalition, which includes membership from Solar Connecticut, the Solar Energy Business Association of New England, the New York Solar Energy Industries Association, the Mid-Atlantic Solar Energy Industries Association, and other groups.

The amount of progress we have made in just the first year of this grant is remarkable. The board of the coalition

has been designated, administrative set-up is almost complete, and with support from all of our student interns, data on solar policy, regulation, and legislation in the region has been collected. Soon our website will publish stakeholder narratives, the applicable solar legislation data, and information regarding the legislative process in each state.

Regional Sustainable Energy Dataset

Generously funded by an Environmental Defense Fund grant, the Pace Energy and Climate Center has compiled an intensive study of municipal sustainable energy programs in Westchester County, New York. The tool kit reveals the importance of municipalities in implementing successful energy projects, promising to streamline adoption of best practices in other counties. We hope to expand the Dataset concept to other counties in New York. The dataset includes a summary and examples of initiatives relating to distributed energy resources of all kinds, how they are used, and what barriers were overcome to implement their use.

Urban Sustainability Directors Network Conference

The Pace Energy and Climate Center participated in the Urban Sustainability Directors Network conference presenting information on how microgrids and district energy are essential to urban sustainability. This conference brought together international thinkers and global industry leaders to discuss and debate the future of energy. Detailing the proactive steps municipalities can take to advance economically and environmentally superior microgrids will help further microgrid integration on the state and regional level.

Port Authority of New York and New Jersey

The Pace Energy and Climate Center was engaged by the Port Authority of New York and New Jersey to convene and moderate a workshop with key stakeholders addressing the conversion of merchant vessels and port operations from oil to liquefied natural gas. Natural gas fuel offers significant climate and pollution benefits, and fueling infrastructure could spur significant competitive advantages to the region.

Electric Vehicle Charging Network

The Pace Energy and Climate Center teamed with the League of Conservation Voters to help facilitate planning for an electric vehicle-charging network in Westchester County, New York.

NY EXCEL

Pace hosted a weekend workshop as part of the NY EXCEL program that "educates entrepreneurs and executives about the markets, financing models, permitting requirements, technology solutions and other unique aspects of New York's clean tech industry." The workshop focused on the evolving energy markets in New York being impacted by the New York Reforming the Energy Vision proceeding and topics like combined heat and power, microgrids, and distributed energy resources within the State. Both Karl Rábago and Tom Bourgeois were presenters.

Options for Climate Change Adaptation

Professor Ottinger, and Research Assistants Pianpian Wang and Kristen Motel presented a study on the Options for Climate Change Adaptation at the conference on adaptation at the Asian

Pacific Center for Environmental Law.

This work outlined how adaptation is typically broken down into three steps, and how these adaptation paths can be promoted and replicated under different circumstances regardless of differences in government structures.

Technology

Energy Efficiency Incentives

Pace Energy and Climate Center published a report on the future of New York's incentives for energy efficiency. Entitled "[Charting a New Course for Energy Efficiency in New York: Lessons from Existing Programs](#)," the report examines the performance of the existing suite of energy efficiency efforts run by the New York State Energy Research and Development Authority and the state's investor-owned utilities. At the time of our analysis, energy efficiency program administrators had achieved 79% of their to-date savings goals. The report explains the best ways to transition from current efforts for acquiring energy efficiency toward the emerging REV model. The Center led the community of public interest organizations in NY in advocating for steps necessary to ensure that new market innovations, including the NY Green Bank, effectively utilize lessons from three decades of NY experience attacking persistent market barriers impeding private investments energy efficiency.

There is universal agreement that energy efficiency will be a key component of any plan to achieve the major reductions in climate change emissions called for by the State Energy Plan. The Center has played a leadership role in pressing to ensure that the REV addresses energy efficiency effectively.

Northeast Combined Heat and Power Technical Assistance Partnership

The Pace Energy and Climate Center continued, for the 12th year in a row, to lead the Department of Energy's [Northeast Combined Heat and Power Technical Assistance Partnership](#) (CHP TAP). Combined heat and power (CHP) is the simultaneous production of useful electric and thermal energy for on-site consumption. It utilizes what would otherwise be waste heat for purposes such as space heating and cooling, domestic hot water, and industrial processes, greatly increasing efficiency and reducing fuel use and resulting pollution. The CHP TAP provides education and technical assistance to potential users of CHP across the Northeast. Through the CHP TAP, the Center provides free initial technical

assistance advisory and basic financial feasibility analysis. Analyzing electrical and thermal loads, continuous operation, low seasonal variation in load, and high power reliability needs, we are able to leverage our extensive expertise and national contacts to help organizations assess CHP potential and project viability. In 2015, the Center completed sixteen qualification screenings, four feasibility assessments, and one advanced technical assistance to one project. The Center has engaged with more than six hundred individuals in education and awareness workshops to share the benefits and practical considerations related to CHP deployment.

NYSERDA Microgrids Report

Pace coordinated a multi-organization team in the drafting of "[Microgrids for Critical Facility Resiliency in New York State](#)" on behalf of the New York State Energy Research and Development Authority (NYSERDA), New York State Department of Public Service (DPS), and New York State Division of Homeland Security and Emergency Services (DHSES). The report explores the

utilization of microgrids. Microgrids is a term to describe groups of interconnected loads and distributed energy resources that can continue to operate even when the main grid is down, providing critical infrastructure resiliency. Microgrids can help facilities like hospitals, police stations, fire departments, and centers of refuge to continue to operate throughout emergency situations even when the main grid fails. The Center authored sections on legal, regulatory, and financial issues impacting microgrid development.

Carbon-Tuning Resource Operation and Deployment

The Pace Energy and Climate Center conducted original research to measure how system-wide carbon dioxide emissions change as distributed energy resources like efficiency and renewable generation are operated. We published our results in a new report, entitled "[Carbon-Tuning New York's Electric System: Uncovering New Opportunities for CO2 Emissions Reductions](#)." Our timely analysis has helped inform the debate on accurately assessing the value of and shaping policy around

resources like energy efficiency, solar PV, combined heat and power, and demand response.

Microgrid Site Selection Toolkit for the New York City Housing Authority

The Pace Energy and Climate Center received a grant from the Environmental Defense Fund to work with Enterprise Community Partners and Integrated CHP Systems Corporation to develop a Microgrid Site Selection Toolkit for the New York City Housing Authority (“NYCHA”). The Toolkit lays out site selection criteria and factors that contribute most to deployment of cost effective and resilient microgrids and discusses why each is important. The model incorporates a variety of characteristics including as building size and siting, population, energy consumption and costs, resiliency needs, and the presence of potential nearby partners such as hospitals or commercial buildings and produces a numerical score that allows all sites to be easily compared to one another.

Innovative Financing for Renewable Energy

Pace Energy and Climate Center authored and presented a paper on

“Innovative Financing for Renewable Energy” at the IUCN Academy of Environmental Law 2014 Colloquium.

UNEP Handbook

The Pace Energy and Climate Center entered into a contract with the United Nations Environment Program to produce and update and sequel to the 2006 study, “UNEP Handbook for Legal Draftsmen on Environmentally Sound Management of Energy Efficiency and Renewable Energy Resources.” Dean Richard Ottinger serves as principal editor for the project, which engages chapter authors from around the globe to provide a vital resource to assist developing countries adopt sound clean energy legislation.

Los Angeles-Beijing Air Pollution Project

Partnering with top China Law School’s Environmental Law Institute in a comparative study of these cities’ air pollution amelioration initiatives.