Update on PURC Research and Outreach

This update on PURC research and outreach is intended to serve as an overview for PURC Executive Committee Members. Below are highlights of a very active year. At the end of this summary is a list of recent research papers that are also available through the research papers search engine on the PURC website at www.purc.ufl.edu.
# Update on PURC Research and Outreach

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HIGHLIGHTS

44th Annual PURC Conference

The 44th Annual PURC Conference, “Florida Utilities: Who’s Driving the Future?” will examine what customers value and how they are being served.

Courses on Executive Leadership, Electricity Pricing, and Regulatory Principles

PURC provided courses in multiple countries. Topics included developing an effective leadership culture, key principles for effective regulation, and developing practical, yet economically meaningful prices in electricity.

Online Course: Regulatory Impact Analysis

PURC continues to offer its Comprehensive Regulatory Impact Analysis Online Course. This fall 2016, 17 professionals from 11 countries participated in the course in an effort to learn how to avoid the pitfalls that stifle utility regulatory decisions and gain support for difficult issues.

Research Initiatives on Distributed Energy Resources, Incentive Regulation, and Competition

PURC faculty and affiliates are engaged in research on behavioral changes of solar customers, demand charges, price cap regulation in energy, demand response, deregulation, anticompetitive conduct, and mergers.

PURC/World Bank International Training Program on Utility Regulation and Strategy

One hundred fifty one people attended this two week program in 2016. Since its inception in 1997, this program has educated more than 3200 professionals representing 153 nations. Commissioner Ronald Brisé was a featured speaker in June.
PURC Advanced International Practices Program

Twenty-two infrastructure professionals from around the world participated in this year’s courses on energy pricing, benchmarking, and telecommunications.

Body of Knowledge on Infrastructure Regulation (BoKIR) web site

PURC, in collaboration with the Public-Private Infrastructure Advisory Facility at the World Bank, expanded the BoKIR content to include fragile states in 2016. This new section includes an overview of how regulatory systems can be built in fragile situation, self-diagnostic tools, review of the best literature on the topic, FAQs, and an annotated reading list.
PRIMARY RESEARCH PROJECTS

ENERGY

Solar Amendments in Florida
This research examined the proposed constitutional amendment promoted by the solar industry in Florida. Published in The Electricity Journal, the paper explained the Florida ballot initiative process for amending the state constitution, the policies contained in this particular proposed amendment, and how the policies related to the traditional regulatory compact. The paper was published before the initiative was declared to have failed to achieve the required number of signatures, and before the launching of the solar amendment that did make it to the ballot, but that did not receive enough votes to be adopted.

Creditworthiness of US Electric Utilities
This paper examined how credit rating agencies evaluate risk from evolving utility business model and regulation. Each of the three major credit rating agencies -- Standard & Poor’s, Moody’s, and Fitch – place major importance on regulation, in particular how regulation affects a utility’s prospects for recovering its costs. For example regulation makes up 25% of Moody’s formula. The agencies generally consider regulated services to be less risky than unregulated services, such as competitive generation. It remains to be seen how the major agencies will view other changes to the utility business model, although Barclays Bank downgraded the bond market for US electric utilities based on the belief that the regulatory compact is hampering utilities’ to adapt to changing technologies. This paper was presented at a state regulator workshop on utility finance in New York.

The Economic and Political Realities of Regulation: Lessons for the Future
As competition emerges for electricity utilities, it is important to keep in mind lessons from the past. One lesson is that actual data, rather than conjecture, is needed for anchoring decisions in reality. Another lesson is that economic incentives are powerful. For example, electric utilities in the UK revealed that they were able to make significant improvements in efficiency once they were allowed to profit from the improvements. Finally successful transitions require that regulators carefully pace the changes so that the system does not derail. Because so many stakeholders have to give up something during times of change, the work of regulation is often about disappointing people at a rate that they can endure.

Renewable Energy Incentives in Kenya: Feed-in-tariffs and Rural Expansion
This paper examines efforts to expand electricity access through the use of renewable energy sources. It discusses the regulatory environment, policies, and tariffs used by the government of Kenya for this effort, focusing on two important programs: the feed in tariff scheme and the creation of the Rural Electrification Authority. These policies and the use of clear targets have increased access and the use of renewable energy. Current challenges, including access to financing and expansion to the rural poor, are also discussed.
Designing Compensation for Distributed Solar Generation: Is Net Metering Ever Optimal?

Electricity customers who install solar panels often are paid the prevailing retail price for the electricity they generate. This paper demonstrates that this rate of compensation typically is not optimal. A payment for distributed generation that is below the retail price of electricity often will induce the efficient level of distributed generation when the fixed costs of centralized electricity production and the network management costs of accommodating intermittent solar are large, and when centralized generation and distributed generation produce similar (pollution) externalities. The payment for distributed generation can optimally exceed the retail price under alternative conditions. The optimal compensation policy varies considerably as industry conditions change.

The Effect of Renewable Portfolio Standards on State-Level Employment: An Ex Post Analysis

Renewable Portfolio Standards (RPSs) programs which propose target levels of energy production or consumption that must come from renewable sources, have become a popular policy in state capitals across the United States. As of 2010, 29 states and the District of Columbia had adopted programs which fall under the RPS umbrella. RPS are often times seen as a tool to foster economic development through job growth. This paper analyzes the effects of RPSs on state level employment in the whole economy. The paper finds RPS adoption does not lead to a statistically significant effect on overall employment.

TELECOM

Adding Dimension to Merger Analysis

Traditional merger analysis in the U.S. focuses on a single dimension, namely the combination of two or more firms that supply substitutable products. As such, merger analysis misses the fact that there are various types of mergers – e.g., hostile takeovers, friendly acquisitions, and mergers of equals – and that the differences among these types affect outcomes. Similarly missing is explicit consideration of merger-created synergies for future markets. We illustrate the effects of painting all mergers with the same brush on the propensity for firms to form beneficial mergers and we suggest means of changing merger analysis to reflect diversity in the natures of mergers and their future markets.

Regulating Regulators in Transitionally Competitive Markets

Over the past 30 years of transformations in telecommunications, the US has gained considerable insights about how to design regulatory policy in the presence of developing competition. The insight to date has focused on how to harness competitive forces to motivate incumbent suppliers to serve the best interests of consumers. This paper stresses the importance of considering the incentives of regulators and explores the associated changes in standard recommendations for regulatory policy design in the presence of developing competition.
Identifying Market Power in Times of Constant Change

This paper explains that traditional approaches to defining markets to investigate market power fail in times of constant change because demand and supply are in constant flux. The analyses rely upon historical data, the value of which degrades over time, possibly resulting in harmful regulatory decisions. This points to a need for a different approach to determining when regulation is an appropriate response to market power. The paper presents an approach that relies upon essential factors leading to monopoly (EFMs), such as control of essential facilities, which persist across generations of products. Market power analyses should be a search for EFMs and policy responses should focus on diffusing the market power without destroying value.

Beyond Net Neutrality: Policies for Leadership in the Information, Computing, and Network Industries

This paper analyzes the FCC’s struggles in developing coherent policies for net neutrality and concludes that the current regulations are counterproductive. It explains a multistakeholder approach that can be used to resolve intra-industry conflicts, which largely drive net neutrality issues, without imposing explicit regulatory constraints on a rapidly evolving technology ecosystem.

Three Things Economists Wish the FCC Knew about Broadband Markets

Three well-known lessons from economics are largely missing from recent FCC decisions. One is that technology competition drives the deployment of high-speed broadband more than any other incentive. The second lesson is that a high market share is generally not a market failure, but an indicator that the company is satisfying customers more than are its competitors. Lastly subsidies created to improve universal service rarely do so.

WATER

Data Transparency as a Key Tool for Regulating Government-Owned Water Utilities

Data collection and information incentives are key for regulating the water sector where government ownership and operation is often the case. The problems are compounded for fragile, conflict-affected, and low income states. Issues, potential actions, and supporting examples that arise when monitoring and evaluating infrastructure utility performance are offered by this paper.

Technical Inefficiency Effects in a Stochastic Production Function for Managerial Incentives in Public Water Utilities

Performance of state-owned water utilities in developing countries is often weak. This study estimates the impact of managerial incentives upon efficiency using a stochastic frontier production function with revenue water as the output. The empirical analysis utilizes an unbalanced paneled data consisting of revenue water, connections, operating expenditure, water delivered and staff, from Uganda’s nineteen NWSC sub-utilities for a nine-year period, 2002-2010. The inefficiency effects are modelled as a function of utility-specific variables: service coverage, level of financial incentives, target difficulty, and year of observation. While financial incentives and
increased service coverage improve efficiency, targets (such as the reduction of non-revenue water) that are perceived as excessive by employees may reduce it. The findings suggest some policy implications: utility managers in the public water sector need to incorporate monetary incentives and increase service coverage to reduce non-revenue water. However, targets need to be set with great care and with transparency.
OUTREACH

Plans for the 44th Annual PURC Conference, Florida Utilities: Who's Driving the Future?

Utility services – energy, water and telecommunications – are all about the customers. But sometimes we get so caught up in the day-to-day court cases, regulatory proceedings, mergers conflicts, and arguments about the utility of the future that we forget customers will drive the future if they are given the chance. Once of the lessons from the evolution of telecommunications is that customers take industries in directions that no one anticipates. At the end of the day all of the arguments over fuels, clean water, investment, jurisdiction, prices, and industry structure fade into the background as customers express their preferences through political and market forces. How will customers make their choices? And who will serve them best?

Conference details are available online at http://www.purc.ufl.edu.

US Department of Commerce Workshop

How do different regulatory models affect the manner in which a utility conducts its business? On December 12, 2016, PURC Director of Energy Studies Ted Kury participated in a workshop conducted by the US Department of Commerce for its staff working with electric utilities in US embassies across the globe. The subject of his talk was the different regulatory structures and industry models employed in electricity regulation, as well as the strategic considerations of each. Participants gained greater insight into the challenges that might be faced by a utility under rate of return regulation, for example, that might not be faced by a utility under a price cap. Or the challenges faced by a generator in a vertically integrated system as opposed to a transparent wholesale market. Overall, the staff gained a greater appreciation of the challenges faced by utilities and regulators, regardless of regulatory and market structure.

14th Annual Conference of the Organization of Caribbean Utility Regulators (OOCUR)

Understanding the power relations between the regulator and the stakeholders involved in the regulatory process will be a key element to create a spectrum of opportunities in the Caribbean. This is the main topic introduced by PURC director of leadership studies, Araceli Castaneda during her presentation at the 14th Annual Conference of the Organization of Caribbean Utility Regulators (OOCUR) held in Jamaica, October 26-28, 2016. Ms. Castaneda shared the results of a survey conducted by PURC and OOCUR among regulators in the Caribbean region. The results showed where the main power imbalances are in the relationships between the regulator and the different stakeholders in the regulatory processes.

International Symposium sponsored by the National Communications Authority (NCA) of Ghana

A lot of telecommunications regulators are asking: How do we know when there is market power or when new technologies compete with old? Those are the wrong questions, according to PURC Director Mark Jamison. Speaking at an international symposium sponsored by the National Communications Authority (NCA) of Ghana, Dr. Jamison suggested that markets are changing too fast to apply traditional approaches to understanding market power and competition. He suggested that regulators instead focus on factors that could lead markets to naturally be monopolies over multiple generations of products. Since the time between generations is
becoming shorter - just a few years in some instances - the question is whether market power will endure over time rather than will it exist for a particular product. Dr. Jamison's paper "Identifying Market Power in Times of Constant Change," is available on PURC’s web site in the PURC working papers.

What are the tools necessary to manage our changing electricity infrastructure?

From May 10-12, 2016, PURC Director of Energy Studies Ted Kury participated in the Energy 21 and ERRA events in Poznan, Poland, where these tools were discussed by regulators and operators from across the region. On May 10, he was a member of the opening panel entitled “The energy sector: between security, innovativeness and competitiveness” where he spoke about the challenges of managing the flow of money within the electricity system. On May 11, he participated in the panel on the modern grid company where he discussed the importance of educating the public, the government, and the regulator about the meaning of ‘electricity service’, cautioning that it goes far beyond the provision of kilowatthours. Finally, on May 12, he participated in a panel organized by ERRA where he discussed the complications that arise when countries have aspirational goals which are not accommodated in statute. Regulators may not be able to honor these aspirational goals, not because they don’t support them, but because they are not allowed to under the law.

Utility Commissioners/Wall Street Dialogue

On May 9-10, Lynne Holt attended a meeting in New York City titled “Utility Commissioners/ Wall Street Dialogue” and participated in a panel discussion on grid modernization – integrating new resources, technologies and services. She presented the highlights of the paper she published on the importance of regulation in credit-rating agency assessments of U.S. electric utilities, in the context of technological changes affecting the industry.

Electricity 101

On April 6, PURC Director Mark Jamison and Director of Energy Studies Ted Kury participated in a workshop organized by the US Department of State for their western hemisphere energy officers. Ted delivered a session on Electricity 101 where he discussed the basics of electricity markets. He also shared a session on emerging challenges in electricity market structure where he discussed the role of carbon abatement, smart technologies, and distributed generation. Mark then delivered a session on challenges for regulators in periods of transition. The officers shared their insights and discussed the challenges faced by countries throughout the Americas and the Caribbean.

5th University of Florida Water Institute Symposium

A number of studies have emphasized that governance involves many elements, including accountability, autonomy, role clarity, policy coherence (especially as related to objectives), stakeholder participation/engagement, professionalism (capacity), and transparency. The OECD has recently identified twelve elements characterizing sound systems of water sector governance, including those already noted. Ultimately, governance affects the (1) effectiveness of institutions in implementing and achieving targets (as quantified objectives), (2) the efficiency of institutions as reflected in the benefits obtained at least cost, and (3)
the trust and engagement of the citizenry—as governance promotes public confidence and inclusiveness of stakeholders (achieving legitimacy and a sense of fairness among affected parties). Sound governance affects conflict resolution among participants, promoting general acceptance of outcomes; poor governance exacerbates problems. Getting governance structures right is central to improving cost containment, service quality, and network expansion. This study identifies seven elements affecting infrastructure performance: institutions, interests (stakeholders), information, incentives, ideas, ideals (priorities placed on objectives), and individuals (leadership). It describes how these seven interrelated elements determine how effectively a regulatory system responds to challenges.

Forum on the Clean Power Plan

On January 28, PURC Director of Energy Studies Ted Kury participated in a forum on the Clean Power Plan sponsored by the Nicholas Institute for Environmental Policy Solutions at Duke University. He participated on a panel on the outlook for multi-state coalitions in compliance plans and described the various barriers and opportunities for cooperation. State’s choices beyond mass vs. rate compliance strategies must be considered, including heterogeneous definitions of zero-emitting sources and the role of energy efficiency.

Annual Meeting of the American Economic Association

How can a regulatory system be designed so that it adapts effectively to changed circumstances? That was the topic of the paper "Adaptive Regulatory Systems" presented by PURC director, Mark A Jamison, at the annual meetings of the American Economic Association. The paper examines adaptive behavior in forming and changing utility regulatory systems. Systems with independent regulatory agencies dampen the effects of political and market power, and diminish information asymmetries, which improves sector performance. But creating or adapting the system triggers resistance from those who experience loss and at weakens regulatory effectiveness for some period of time. Using empirical studies from behavioral economics and psychology, the paper constructs a model that examines where such losses occur and identify techniques for encouraging adaptive behavior. The paper is co-authored with Araceli Castaneda, PURC's director of leadership studies, and Michelle Phillips, PURC junior economist. The AEA meetings were in San Francisco, California, in January 2016.

Other Research Conferences

At the International Industrial Organization Society Conference, PURC awarded its annual “Best Paper in Regulatory Economics” award. PURC researchers participated in several other international conferences, including the International Industrial Organization Society, the Telecommunications Policy Research Conference, and the Organisation of Caribbean Utility Regulators.

Results of the 43rd Annual PURC Conference

Speakers examined options and decision making for environmental policies, energy supply, industry roles and responsibilities, and water regulation. Conference details are available online at http://www.purc.ufl.edu.

**Body of Knowledge on Infrastructure Regulation (BoKIR) Web site**

PURC updated this valuable online resource to include more recent information in its sections. Currently, the web site provides tutorials, literature surveys, self-paced tests, and more than 500 downloadable references on utility regulation, as well as a regulatory glossary translated into several different languages. As of 2016, the glossary of terms is available in 11 languages including Bulgarian and Arabic.

**TRAINING AND DEVELOPMENT**

**39th and 40th PURC/World Bank International Training Programs on Utility Regulation and Strategy**

One hundred and fifty-one infrastructure managers learned from each other and from leading experts during the January and June deliveries of this biannual, two-week program in Gainesville. The program is designed to enhance the economic, technical, and policy skills required to design and manage sustainable regulatory systems for infrastructure sectors. The participants studied ongoing infrastructure reform programs, networked with international speakers, and offered their own insights into regulatory policies.

**2016 PURC Advanced International Practices Program**

PURC delivered three courses under its Advanced International Practices Program: Energy Pricing, Benchmarking Infrastructure Operations, and Advanced Topics in Telecom Policy and Regulation. In attendance were 22 participants from 13 nations. Participants of the energy course performed price reviews and analyzed financial statements for rate setting. Benchmarking participants assessed how information on trends in key performance indicators helps decision-makers. Telecom participants examined new technologies and services, customer demand, international trends and business challenges in ICT. Dr. Jamison, Dr. Berg, Dr. Kury, and Ms. Castaneda designed and delivered the courses during the 10-day program.

**Practicing Leadership in a Political Environment: A One-Day Intensive Training Workshop for Emerging Leaders in Utility Policy**

In January and June, Dr. Jamison and Ms. Castaneda delivered leadership workshops for regulatory professionals, who examined the activities, behaviors, mindsets, and skills of a successful leader during this training workshop designed by PURC for emerging leaders in utility policy.

**Comprehensive Regulation Impact Analysis**

PURC’s online course provides tools and approaches for regulatory impact analysis (RIA), a systematic appraisal of the potential impacts of a regulatory decision to assess whether the decision is likely to achieve the desired
objectives and at what cost. Through case studies, exercises, and lectures, course participants learn how to identify key questions, identify stakeholders and engage them in the analysis, use appropriate analytical techniques, and communicate their findings. The October 2016 offering of this online course was led by PURC director of energy studies, Ted Kury, and PURC director of water studies, Sanford Berg.

**Regulatory Training Course for the Public Utilities Regulatory Commission of Grenada and other Stakeholders**

Recent legislation has changed the manner in which GRENLG, the electric utility in Grenada is regulated. Grenada has typically regulated its vertically integrated utility through statute, but parliament instituted two major changes this past summer. First, the established a process to liberalize the generation market in the country, paving the way for independent power producers. Second, they have established an independent regulatory agency to regulate the public electricity utilities on the island. This program, conducted by PURC Director of Energy Studies Ted Kury and Raj Barua, PURC Senior Fellow and the Executive Director of the National Regulatory Research Institute, and delivered to an audience of utility and ministry staff, consumer and environmental groups, and other interested parties introduced the changes occurring in Grenada and the opportunities and challenges faced by the country. Topics included the role of regulation, the process of regulation, utility finance and ratemaking, the integration of independent power producers, and the challenges of transforming the electricity sector, left participants with a greater appreciation of the challenges and opportunities of their new system, along with the challenges facing their new regulatory agency.

**Advanced International Practices Course for LUCELEC on Utility Pricing**

The National Utility Regulatory Commission of St. Lucia has recently expanded its scope of regulatory services to include the electricity sector. PURC Director Mark Jamison, PURC Director of Energy Studies Ted Kury, and David Richardson delivered PURC’s one week advanced program on pricing to an audience that included executives and staff from LUCELEC, as well as staff of the regulator and other interested stakeholders. Topics included the development of the revenue requirement, cost allocation, and the derivation of retail prices. Participants not only experienced interactive presentations on these topics, but had the opportunity to practice their new skills in small group, utilizing PURC’s proprietary spreadsheet model. Participants then presented their rate designs and shared the process that the group had discussed. The latter part of the program involved special topics applicable to the water industry, which NURC also regulates. Everyone gained a better understanding of the pricing challenges facing the country and the skills necessary to address them.

**Regulatory Training Course for the Members of the Office and Senior Managers at the OUR**

Recent statutory changes in Jamaica have established Commissioners as the regulatory decision makers for the Office of Utility Regulation, supplementing the Director General. PURC Director of Energy Studies Ted Kury and Raj Barua, PURC Senior Fellow and the Executive Director of the National Regulatory Research Institute, conducted a three day program in Kingston for the new Commissioners and key staff of the OUR. Topics included the role of regulation, the regulatory process, utility finance, ratemaking, and the role of regulation in implementing broad energy policy. The new Commissioners, drawn primarily from the business and academic community, remarked that their perception of regulation and the reality were very different. One remarked
that he had viewed his role as largely administrative and was a bit daunted at the types of decisions he would be asked to make. All left with a better understanding of their role in the country’s electricity system.

**Aqualectra Leadership Training and Coaching**

How can an executive team create a leadership culture? When Aqualectra CEO Darick Jonis posed this question to PURC, Mark Jamison and Araceli Castaneda designed a three-phase executive and leadership program for the utility. During Phase I of this program, these PURC faculty worked with the executive team to create an innovative and business-mind leadership culture to help them thrive in their difficult context. This was achieved through a set of leadership workshops and executive coaching that melded three leadership frameworks: Servant leadership, adaptive leadership, and situational leadership. Phase I was delivered over a five-month period earlier this year. Phase I also included a seminar for the utility’s board of directors. Phase II of this program is scheduled for 2017. Phase II will embed this type of leadership among the executives through experiences to deepen leadership habits, and will extend this leadership style among the unit directors and company’s upper management.

**Energy Pricing Course for The Gambia**

What are the challenges and best practices in energy (electricity and gas) pricing? What are the innovative ideas for addressing efficiency and environmental issues? This customized version of PURC’s Energy Pricing course was designed to incorporate the particular challenges faced by The Gambia. Participants included representatives of the National Water and Electricity Company, the Public Utilities Regulatory Authority (PURA), the Ministry of Finance and Economic Affairs, and the Ministry of Petroleum and Energy. The participants in this course learned core principles and engaged in an energy pricing case study from start to finish.

**Regulatory Training Course for the National Utilities Regulatory Commission of St. Lucia**

What is the role and responsibility of regulation? What are the tools that regulators use and how do they work? What are implications of and strategies for non-revenue water and electricity? These questions and others were covered in a two-day course for the National Utilities Regulatory Commission of St. Lucia (NURC). Participants included NURC Commissioners and staff, as well as representatives of LUCELEC (the incumbent electric utility in St. Lucia), ECERA, CARILEC, CAWASA, the Public Utilities Department, WASCO (the incumbent water utility in St. Lucia), and local stakeholders from the electricity industry. The participants engaged in discussions of the issues facing the electricity sector and the future of regulation in St. Lucia. The course was facilitated by PURC director of energy studies, Ted Kury and PURC senior fellow, Raj Barua.

**Assessing Social Impacts in a Comprehensive Regulatory Impact Analysis**

How can qualitative analyses be performed for a regulatory impact analysis (RIA)? This was the topic for a three-day course for the National Broadcasting and Telecommunications Commission (NBTC) of Thailand. The course examined four ways of ensuring that RIA captures impacts that are hard to quantify. One tool is to conduct surveys of stakeholders. This starts with brainstorming on who are the important stakeholders, moves onto developing and testing specific questions that address the critical information, and concludes with a survey
launch, results monitoring, and evaluation. Another instrument is behavior observation. Critical questions include who to observe, where to observe, what to observe, and how to conduct in-depth interviews. The third instrument is focus groups. This is more than just having a public meeting to learn what people think. It involves carefully designing discussion questions, taking polls during the group meeting, and designating and training staff to be observers as well as discussion leaders. The final method is using social media to see what people are talking about, their opinions, and who they listen to. The course was taught by PURC director Mark Jamison and Professor Jasmine McNealy of UF’s College of Journalism and Mass Communications. The course, which was held in Bangkok in March 2-4, 2016, was attended by 30 staff from the NBTC.
FACULTY RESEARCH FOCUS

Mark A. Jamison, Director

Dr. Jamison conducts studies on leadership in regulation, regulation and strategy in telecommunications, and regulatory institutions. In recent years, his research has been presented at meetings of the American Economic Association, Industrial Organization Society, Western Economic Association, Australian Competition and Consumer Commission, Telecommunications Policy Research Conference, the Caribbean Electric Utility Services Corporation, the Organisation of Caribbean Utility Regulators, and the National Association of Regulatory Utility Commissioners. He is the principal investigator on a National Science Foundation grant to examine barriers to adoption of solar technologies in developing countries. His current research examines market competition, adaptive regulation, and the essential DNA of electricity regulation. He has conducted training programs for regulatory organizations in Africa, Asia, Australia, the Caribbean, Central America, Europe, North America, and South America.

Ted Kury, Director of Energy Studies

Dr. Ted Kury’s research has focused on three current issues confronting energy markets: the efficacy of relocating power lines, the complexity in determining optimal levels of carbon dioxide abatement, and the effects of restructured electricity markets. The relocation of power lines is a complicated question because relocation is very expensive and does not necessarily reduce the damage associated with storm events. In areas more susceptible to storm surge and flooding, the relocation may even increase damages, leading to a waste of valuable consumer and utility resources. Understanding how the efficacy of undergrounding changes with location is critical to ensuring that customers are receiving safe, reliable electricity service at just and reasonable rates. In addition to his academic work, Dr. Kury has published a number of essays in the popular press on the topic. Economic theory provides clear guidelines on what constitutes optimal levels of production for any good—the point at which the marginal cost is equal to the marginal benefit. However, in practice, these curves are not always well-behaved, and this can lead to different characterizations of the optimum. So while an understanding of these costs and benefits is necessary to determine optimal levels, it is not sufficient, and public policy should take this into account. In addition, the sensitivity of these marginal abatement curves to the price of natural gas means that consumers suffer twice as natural gas prices increase. This question is critical as states decide how to comply with the EPA’s Clean Power Plant Rule. Restructured electricity markets have led to more opportunities, but it is not clear how these opportunities are distributed. Dr. Kury’s research has shown that the benefits of increased trade in transparent wholesale markets are not uniformly distributed, with larger and privately-owned utilities more apt to participate. He is also addressing the question of whether this restructured market has influenced a utility’s decision to invest in transmission assets.
Lynne Holt, Policy Analyst

Dr. Holt's research agenda for 2016 included publishing a paper on the importance of regulation in credit-rating agency assessments (Moody's, Standard & Poors, and Fitch) of U.S. electric utilities and conducting research on community solar.

Araceli Castaneda, Director of Leadership Studies

During 2016, Araceli Castaneda’s work in the leadership space focused on the design and delivery of a five month long executive leadership program for a utility. This work was carried out jointly with Mark Jamison, and it included a set of leadership workshops and coaching sessions for the executive team of the company. The work performed in 2016 constitutes phase I of this leadership program. Phase II is scheduled for 2017 and it will embed and deepen the innovative and business-mind leadership culture from Phase I among the executive team members, and it will extend this leadership style to the unit directors and upper management of the company.

Towards the end of the year, Araceli Castaneda begun to study power relations in regulation and presented on this subject at the 2016 OOCUR Annual Conference held at the end of October in Jamaica. This work is expected to continue in 2017.

Sanford V. Berg, Senior Fellow

Dr. Sanford (Sandy) Berg has been examining internal and external governance mechanisms in the context of infrastructure reform. His article on “Seven Elements Affecting Governance and Performance in the Water Sector” is forthcoming in Utilities Policy. Under review at another journal is his paper, co-authored with Michelle Phillips, “Data Transparency as a Key Tool for Regulating Government-Owned Water Utilities”. That paper examines factors that are important for data collection and information initiatives in infrastructure where government ownership and operation is often the case.

He has also completed a set of Frequently Asked Questions for a new portal on revitalizing and reforming regulatory systems, available at www.regulationbodyofknowledge.org. The FAQs address setting performance targets when data are limited, establishing information systems that yield key performance indicators, and developing incentives for improving performance in fragile states. As part of that funded project, he worked on a typology that will help policy-makers develop strategies to strengthen infrastructure performance. He plans to continue incorporating some of the answers to these FAQs into more Working Papers. He also co-authored a paper on “Adaptive Leadership in Water Utility Operations: The Case of Uganda,” which builds on the work by Castaneda and Jamison. Another co-authored paper is appearing as a chapter in the International
Water Association’s book on *Performance Based Contracts for Improving Utility Efficiency*. Berg continues to assist in the delivery of PURC eLearning and training programs for international participants.

**David Sappington, Lanzilloti-McKethan Eminent Scholar**

Professor Sappington’s ongoing research focuses on the design of regulatory policies to: (i) limit peak electricity consumption by providing incentives for demand response; and (ii) promote efficient distributed generation of electricity via net metering and related policies.
APPENDIX

Public Utility Research Center

Recent Publications and Working Papers


