

Energy Sustainability: Research and Outreach at PURC

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Recent PURC Projects

- Expansion of Body of Knowledge of Infrastructure Regulation
- International Training
- Public Policies towards Carbon
- Adapting to Climate Change: Hurricane Hardening

www.regulationbodyofknowledge.org

- Resource for policy-makers, practitioners, researchers, and students,
- Summaries of key concepts
- Links to over 500 references and case studies
- FAQs
- Glossary Translated,

The screenshot shows the website's header with the title "Body of Knowledge on Infrastructure Regulation" and logos for PPIAF and the Public Utility Research Center at the University of Florida. A search bar is located in the top right. The main content area features a circular navigation menu with segments for: Introduction, Overview, Foundations of Regulation, Market Structure, Financial Analysis, Price Level Regulation, Tariff Design, Quality, Social, Environmental, Regulatory Process, and a highlighted "NEW! Regulatory Challenges (FAQ)" segment. The center of the circle contains the text: "Body of Knowledge on Infrastructure Regulation. Principles, best practices, and case studies for your easy reference and learning." To the right of the menu is a "BROWSE BY FUNCTION" sidebar with options like "Explore the BoKIR", "Download Full Annotated Reading List", "Download Narrative Only", "View Glossary", "Download Glossary" (with language options: English, Chinese, French, Italian, Portuguese, Spanish), "Self-Testing", "Site Tools" (with sub-options: Site Guide, Mailing List, About this Site, Useful Links, Downloads, Contacts), "Search References", and "Submit Feedback". At the bottom, it lists funding providers: PPIAF, World Bank, and the Public Utility Research Center at the University of Florida.

FAQs on Renewables

- *What are the regulatory issues presented by the following technologies: Hydropower? Wind? Geothermal? Solar? Biomass? Distributed generation?*
- *What is the most appropriate economic methodology for evaluating alternative electric generating technologies?* [Joskow (2011) demonstrates that the standard life-cycle cost metric ("levelized cost" per MWh supplied) is ". . . inappropriate for comparing intermittent generating technologies like wind and solar with dispatchable generating technologies like gas and combined cycle. . ."]
- *What are the primary rationales and problems with promoting renewable energy expansion?*

Renewables Continued

- *What policy objectives need to be taken into consideration when considering net metering as a tool to promote distributed generation via renewables*
- *What regulatory steps should be taken to implement rules for net metering to promote distributed generation via renewables?*
- *To what extent does a regulator need a specific mandate to promote renewables and/or energy efficiency?*

Renewables Continued

- *How effective is Green Pricing in promoting renewables?*
- *What are appropriate penalties if renewables targets established by regulators are not met by particular dates?*
- *How can feed-in tariffs (FITs) be designed to encourage renewable energy?*
- *How can the regulator balance the higher costs of some renewables against the need to keep prices sufficiently low to promote greater coverage of electricity systems?*

Energy Efficiency

- *Should energy efficiency programs be directed towards utilities or customers?*
- *What policies might be implemented to compensate utilities for lost sales due to increased energy efficiency by customers?*
- *What are the appropriate methodologies for assessing the effectiveness of EE programs? For example, to what extent does load-shifting promote greater energy efficiency?*
- *What types of incentives can be utilized to reduce line losses?*
- *To what extent are Energy Service Companies (ESCOs) effective in promoting energy efficiency? What financing and oversight arrangements (e.g. audits) promote the wide-spread adoption of EE technologies?*

Both Renewables & EE

- *To what extent should regulators be involved in providing technical and strategic advice to legislators and policy-makers as they develop laws affecting energy efficiency and renewables?*
- *What are the most cost-effective mechanisms for encouraging the production of renewable energy ?*
 - Tax incentives, Taxes on carbon, Zero import duties on components for production,
 - Differential feed-in tariffs for the use of different technologies, Cogeneration rates,
 - Auctions to contract for capacity, and Renewable Energy Portfolios.
- *What are the most cost-effective mechanisms for encouraging the production of greater energy efficiency?*
 - Explicit subsidies, and Standards and labeling programs for appliances that are energy efficient
- *What case studies related to these technologies can be utilized to assist in the development of national policies towards the promotion of renewables and energy efficiency?*

Energy Conservation

- ***What are the strengths and limitations of Decoupling as a regulatory tool?*** [Decoupling breaks the link between a utilities earnings and kWh consumed by customers and is often supported as a means of increasing energy conservation and reducing load.]
- ***What can improve the prospects for the sustainability of utility-based Demand Side Management programs?***
 - (i) Does the utility have the incentive (either through regulation or cost recovery both for program costs and lost revenues) to implement such programs?
 - (ii) Does the utility/regulator have the necessary staff and skills to evaluate such programs?
 - (iii) Does the program include provisions to sustain itself through ongoing and planned sector and pricing reforms?

International Training

- PURC/World Bank International Training Program on Utility Regulation and Strategy
- Since 1997, PURC has hosted
Over 2500 infrastructure managers,
regulators, and policymakers
From 148 nations
- Special Courses—in over thirty countries
and on campus

Carbon Policy

- Began as collaborative effort with Center for Economic Forecasting and Analysis at FSU
- Quantification of the CO₂ price required to comply with then-Governor Crist's emissions standards, under a variety of scenarios for input assumptions
- Impact of the CO₂ price on the economy of the state of Florida
- Resulted in papers relating to the short and long run impact of carbon pricing on resource allocation in electric generation and the impact on the relationship between on- and off-peak electricity prices

Hurricane Hardening

- Began as a statewide initiative following the hurricane seasons of 2004-05
- Collaboration with utility sponsors has resulted in three major projects
 - Simulation model for assessing the costs and benefits of storm hardening activities, including the relocation of distribution wires
 - Greater communication regarding vegetation management practices
 - Comprehensive storm damage database and installation of coastal wind monitoring stations

Thank You

- Questions are Welcomed
- www.purc.ufl.edu
- www.regulationbodyofknowledge.org