



Renewables and Energy Efficiency in the Body of Knowledge of Infrastructure Regulation

**By Sanford Berg
Distinguished Service
Professor, Economics**

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Principles, best practices, and case studies for your easy reference and learning.

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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
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