

**Key Lessons from the
30th PURC/World Bank International Training Program on
Utility Regulation and Strategy
June 13-24, 2011**

Annotated by Sanford V. Berg, University of Florida

Teachers learn from their students, and students learn from each other. As in the past, the 99 participants from 39 nations in this training course identified the key lessons learned over the two-week period. During the concluding session of the program, they shared their reactions to formal presentations and informal networking. The PURC team appreciated the dedication and energy exhibited by participants: attendees brought insight and understanding to the sessions and shared their ideas with all of us.

Note that while most of the lessons refer to regulatory agencies and to those developing infrastructure reforms, the principles apply to operators as well. Organizations face the same challenges: creating a sustainable infrastructure system where all stakeholders have confidence in the integrity of the process and have a shared vision of improved infrastructure performance.

As PURC's Director, Mark Jamison, observed: "Many of the lessons tend to be strategic rather than technical in nature – suggesting that many of the important ideas involved how regulators, representatives from government ministries, infrastructure managers, and consumer advocates needed to 'get on the balcony'." Intentionally stepping back from the "give and take" of regulation allows leaders to see how various stakeholders limit or promote reform. We hope that the annotated list of lessons stimulates further discussion among those involved in these important sectors. I take full responsibility for errors of interpretation in this summary of key lessons.

Sandy

- 1. Magical solutions do not exist.** *National circumstances differ so regulators must develop appropriate approaches for managing specific situations—guided by core principles.* No simple recipe exists. Throughout the program, speakers and participants have noted that there is no ideal way to regulate. The legal structure and other aspects of the institutional context limit what a regulator can do in any particular nation. However, regulatory agencies can conduct a strategic analysis of the organization's strengths, weaknesses, opportunities, and threats (SWOT). Reviewing the situation helps leaders of the organization shape the institutional constraints in ways that can increase the likelihood that sector performance will improve.

- 2. Networking is a valuable activity.** *Because lessons can also be applied across countries, working with colleagues in other organizations can strengthen the knowledge base of decision-makers.* Many regional associations serve as clearinghouses for studies and reports. They give people a chance to expand their professional education. Such interactions provide opportunities to mentor and to learn from others. Networking with

colleagues from around the world provides infrastructure professionals with insights about how to implement “best practice” in their home countries. No nation has “all” the answers, but the process of sharing ideas and experiences can promote professionalism, improved regulatory processes, and better decisions. Similarly, networking within a regulatory agency represents an important source of information.

- 3. If problems cannot be “solved” (at least) they can be “managed” in cost-effective ways.** *Participants in the process must search carefully for policy options and then analyze the impacts of each option on national objectives.* For example, when policymakers articulate a vision for poverty alleviation, including broad social justice objectives, regulators must have the tools to implement policy. In the process, they balance the concerns of current customers, current suppliers, and current public officials with the concerns of those who lack infrastructure services, those who wish to enter certain lines of business, and those political leaders who may not currently be in power.

- 4. Common problems face each nation and region of the world.** *By participating regularly in new learning experiences, decision-makers can learn from others (regulators in other countries, academic consultants, and utilities).* We all bring limited perspectives to our professional activities. Other stakeholders may have access to advanced analytic tools. Regulation is a potentially draining profession where talented (but underpaid) professionals find themselves fighting fires with obsolete fire-fighting equipment. Identify local universities that have the capacity to offer regulation as a specialty: recruit their students, work with faculty, and create workshops that can energize the operations of regulatory organizations. When opportunities for continuing education arise, commissions need to take full advantage of them. Workshops need not be highly formal gatherings. Rather, they can be designed to identify issues that remain unresolved and to reach agreement on those items that should be taken off the table. If some participants are not contributing to the substance of the discussions, they should be identified and asked to provide suggestions for addressing the issue that precipitated the initial concerns. One could argue that if a group is not part of the solution, it is part of the problem.

- 5. Learn from the mistakes of others.** *While there is no single recipe that will work in all countries, principles have been developed that are applicable across sectors and nations.* These principles can be learned, but international experience provides a continual stream of new insights regarding how regulatory governance and policies affect cost containment and the introduction of valued new services. Active pursuit of new ideas and strategies that can make a difference is probably the best indicator of regulatory performance. Sadly, regulators are often preparing to “fight the last war,” when the objective situation has changed. Using old tools to address new issues is likely to result

in an appearance of continuity, but ultimately the issues end up being resolved in courts (after long lags) or commercial opportunities (for new services or suppliers) are shelved.

- 6. Balance technical and strategic considerations.** *The non-technical (or adaptive) elements of a problem must be addressed.* Technical concepts are required to characterize the complex features of infrastructure: opportunity costs, financial sustainability, incentives, and rate design are just a few topics that must be understood if regulatory decisions are to promote best practice. However, there may be a danger of over-emphasizing technical issues to the exclusion of broader issues of political economy. The political economy of regulation addresses the role of special interest groups and political power as factors affecting the regulatory system. In addition, the best technical analysis is useless if the regulators lack communication skills.
- 7. Make a decision, communicate the decision, and make it an effective decision.** *Decisions do not implement themselves, nor do affected parties automatically understand the rationales behind decisions.* Monitoring and reporting systems should be part of a ruling. Implementation requires as much care as making a decision. In addition, regulators must prepare carefully for interactions with the media: Regulators need to develop good relationships with the press—regardless of the political orientation of the particular newspaper, radio program, or television station. Investigative reporting may seek to sensationalize their stories or put spins on the news that result in one-sided characterizations of the issues. Nevertheless, the regulatory commission must attempt to present facts clearly, identify core issues, tell the whole story (and why it is important for average citizens), and avoid jargon. By being accessible to all elements of the media, a regulatory commission signals that it is prepared to defend decisions and to listen to different voices. With good follow-through and a follow-up review, the impacts of decisions can be evaluated and future decisions improved.
- 8. Exercise authority judiciously; power and justice must go together.** *As one participant said, “Power without Justice is ruthless. Justice without Power is toothless. Justice and Power together is marvelous.”* The exercise of authority requires that the regulator avoid regulatory capture. If a regulatory commission only communicates directly with the operator, and that operator is politically powerful, there will be a public perception that regulatory decisions are unduly influenced by these contacts. Similarly, a commission could be captured by powerful consuming groups, leading to excessively low prices that are not sustainable. Working for the long-term financial sustainability of the sector requires the balancing of the interests of various stakeholders. Ultimately, justice involves both procedural justice (transparency in the process) and social equity (outcomes that address the sources of poverty).

- 9. Leadership is crucial if infrastructure performance is to improve.** Infrastructure industries are complex and often have weak performance. However dysfunctional the current system is, some stakeholder is benefiting from existing arrangements. One task of the leader is to identify those issues that are not being addressed, and bring them to the table for discussion.
- 10. Political challenges to regulatory autonomy and regulatory decisions are always present.** *Politicians often view pricing as their tool for getting re-elected, so they make “promises” that are inconsistent with reality.* Of course, complete political independence is unrealistic: infrastructure is an important contributor to national growth, and access to networks has significant symbolic meaning. In addition, complete independence would be counterproductive, since that would imply a lack of accountability. Nevertheless, the time horizons for infrastructure investments require credible commitments to policies—so regulatory decisions do need to be insulated from day-to-day political considerations.
- 11. Regulators must continually adapt to the technological, social, and political environment.** *Thus, regulation is a journey not a destination.* Decisions always are made in a particular context, where the political, economic, and social environment sets the stage for moving forward. Sometimes, goals or targets are not feasible if political constraints on price are rigid. It is better to be clear about what is possible. Set targets based on reality, not rhetoric. Leaders must think, plan, and act strategically. That means taking into account the reactions of all stakeholders and continually strengthening the internal skills of their agencies. Of course, there is no need to re-invent the wheel. Textbooks and decisions in other jurisdictions contain methodologies and approaches to cost allocation, pricing, service quality, and performance improvements. Vast amounts of information are available on the web or through collaboration with colleagues.
- 12. “A person who never travels, believes his mother’s cooking is the best in the world.”** *This Kiganda proverb reminds us that there are good things all over the world, including food and regulatory strategies!* We are often isolated and comfortable in our own beliefs. Even when other perspectives are offered, we may reject ideas out of hand because they are inconsistent with our narrow views. The PURC Training Program offered a menu of ideas. Ultimately, of course, the answers are at home—but we need to see the issues with fresh eyes. As George Moore said, “A man travels the world over in search of what he needs and returns home to find it.” (George Moore)
- 13. Regulation is not an end in itself, but a tool for improving sector performance.** *For some sectors (like telecommunications), a light hand that promotes liberalization may be best. For others, rate of return regulation or price caps may be called for.* The key point is that regulation must serve the needs of the nation, not the egos of the regulators or the

politicians. In the PURC Training Program, participants examined *incentives*, *information* needs, *institutional* development, *ideology* (values), and *implementation* issues. The sharing of experience promoted valuable exchanges of *ideas*. Ultimately, both regulation and infrastructure operation is the result of *individuals* who bring *inspiration* and *initiative* to their jobs.

14. Regulators must learn how to manage the expectations of stakeholders.

Infrastructure services have high symbolic and economic importance. Consumers want low prices, universal service, and high quality. Political leaders set policies and priorities that give themselves visibility and leave a legacy for the nation. Public and private operators seek financial sustainability—through higher prices or lower costs and (with decreasing frequency) through government subsidies. Regulators who balance these interests can resemble a juggler who must keep multiple objects from hitting the floor. Sometimes the regulator has too many items to juggle and too few hands to succeed in the tasks. **Communicating what is possible is a key task facing regulators.**

15. There are many policy options that need to be explored:

Information can level the playing field. When regulators have difficulties with a company, information sharing across national boundaries is one way to reduce information asymmetries and to develop strategies for dealing with powerful suppliers. A regulatory ruling affects the revenues of suppliers and the pocketbooks of customers. To increase the probability that stakeholders will accept a ruling, the process must be timely, transparent, and viewed as reflecting the legitimate concerns of all parties. A rule-making process involves a number of steps. Ultimately, the decision must be clear, concise, and definitive, so all affected parties understand the factors supporting the decision and the weights given to expected performance outcomes.

16. It is important to bring fresh perspectives to common problems.

Listening to others is one way to gain insights regarding what others are seeking and what they see as feasible. Then information can be developed to educate stakeholders in what is possible. Interactive learning involves both the teacher and student in the learning process: joint participation makes the difference. No one has the detailed map for improving sector performance. However, continuing professional development can help staff recognize key signposts and provide them with tools for examining the implications of alternative routes to the destination.

17. Keep your eyes on ultimate goals.

It is easy to be distracted by day-to-day tasks, taking your eye off key objectives for the sector. People manage what they measure: having information on past trends and on current performance provides a foundation for realistic targets. If infrastructure operators cannot provide information, their managers may not be

doing their jobs! Similarly, if regulators do not regularly evaluate the impacts of their decisions, they are not doing their jobs.

18. Knowledge and experience are crucial for sound regulation. *Leadership requires perspective, initiative, courage, and focus.* Commissioners can make a huge difference in agency effectiveness and sector performance. In addition, professional staff can be leaders, by engaging stakeholders in an adaptive process that recognizes the sources of change in the sector and by helping affected groups confront the key issues. “Ultimately a genuine leader is not a searcher for consensus, but a molder of consensus.” (Martin Luther King)

19. Regulators need serenity, courage, and wisdom. *Reinhold Niebuhr’s Serenity Prayer identifies how we might consider dealing with the status quo:*

God, grant me the serenity to accept the things I cannot change,
Courage to change the things I can,
And wisdom to know the difference. (Reinhold Niebuhr)

20. Regulators need preparation, leadership, and a sound legal environment. *These elements allow decision-makers to consider a range of policy options, since there are no easy solutions to regulatory problems.* Each nation has different legal requirements, institutional situations, and historical experience. Thus, regulators are in a position to manage (not solve) complex problems by anticipating the impacts of alternative policies. The rule must be robust in terms of system performance under alternative (realistic) scenarios. Even without simple solutions, the agency should include simplicity as an objective—given the uncertainties of excessively complex incentive schemes. Regulators must continually evaluate the impacts of existing rules. One can argue that process matters, but “performance counts.” The key issue is how to “count” (quantify) performance. Any regulatory rule creates incentives, so the outcomes must be carefully monitored to ensure that rules are accomplishing their intended results. Just arguing that firms should always seek appropriate cost containment misses the point that we often do not know what is possible until we are under some pressure to achieve targets. This point applies to both government agencies and utilities.

21. Leadership requires wisdom, vision, interpersonal skills and communication skills. *“Regulators must be as wise as Solomon, as patient as Job, and have the hide of a rhinoceros.”* This quotation from a New York Public Service Commissioner outlines three of the qualities that can make a regulator effective as a leader. Certainly, expertise helps, but deeper wisdom is even more important. For example, the regulator needs to understand what is politically feasible. Similarly, stakeholders have expectations and seek opportunities to articulate their positions. Listening to and processing this information

requires a great deal of patience. Finally, regulators are targets for those whose expectations are not met. They need to be prepared to face criticism and extreme political pressure.

22. Regulation involves making everyone equally unhappy. *Infrastructure industries are complex and their performance affects everyone.* The interests of different groups are often in conflict (as with prices vs. returns to investors). No single group is likely to obtain all that it desires. Thus, evaluating the performance of an entire regulatory system goes beyond how the regulatory agency is doing its job, but also to the legal structure under which it operates, the income growth of the nation, political interference, citizen expectations (realistic or not), and many other factors beyond the agency's control.

23. Learn from experiences of others through networking. *Every organization needs mechanisms for sharing experience and information.* Internally, teams can bring together different disciplinary skills and diverse personalities. Externally, meetings and workshops with those in comparable situations can stimulate new ways of thinking about regulatory issues. Regular workshops represent one way to remain aware of the need for potential changes in regulations. Similarly, networking across countries promotes the exchange of ideas regarding best practice and a sense of professionalism within a regulatory commission. There may be nothing new under the sun, but we sometimes are looking in the wrong direction. Being open to new ideas means that decision-makers are less likely to always rely on what was done in the past.

24. Nations and sectors have significant differences, but commonalities as well. *Seek consistency across sectors. Because legal issues often cut across sectors, regulators must take a broad view of infrastructure developments and seek consistency when situations in network industries are comparable to one another.* Examples of regulatory tools that apply to capital intensive firms include benchmarking, targeted subsidies, cost of capital estimates, and the role of price signals in promoting efficiency. Workshops and discussions among national and regional regulators can reduce jurisdictional disputes and improve the investment climate. There is no simple set of universal rules for sustainable regulation. However, regulators must establish objectives and then prioritize them so stakeholders are fully aware of why particular decisions were made.

25. Addressing issues requires input from many disciplines. *Engineering, law, economics, and other fields contribute to the analysis of infrastructure challenges.* Teams can be formed to address issues. Furthermore, agencies will find consultants more useful if the issues are clearly laid out and the “jargon” understood prior to engaging them. Note that the most dangerous “knowledge” is a principle or idea that is actually false. When we think we understand something, but actually do not, then we are likely to push forward without a solid grounding in reality. All of us are susceptible to excessive confidence in our own understanding of the way things work. That is one reason why discussions and

thoughtful debate are necessary within any organization. When conflicting ideas are not openly discussed, decisions are likely to be based on inaccurate information and/or inappropriate methodologies.

26. Political interference is always a threat. *When fundamental economic principles and short-term political goals are in conflict, sector performance is likely to be suboptimal.* Thus, the underlying economic forces need to be understood by those involved in setting and implementing infrastructure policy. How can we be sure that our accounting for reality is in line with objective facts? We sometimes say that “Seeing is believing.” It is also true that “Believing is seeing.” Sometimes, what we expect to see is what we observe. Thus, we need to be sure that both regulators and politicians recognize the conceptual filters that we use to understand economic forces affecting industry performance. Of course, if the rules are not clearly communicated to stakeholders or elected politicians are at odds with agency decisions, the best analyses can be stymied by political unrest and changes in the law. Nevertheless, the regulatory commission still has a mandate to do the best it can within the institutional constraints it faces. Note that industry and regulators need not be adversaries. Regulation is not a zero-sum game where consumers lose or operators win. Workshops can resolve some technical (factual) issues, but authority conflicts and conflicts between different stakeholders (interest conflicts) require negotiation.

27. Be careful what you “copy” from others and how you “paste” the ideas into your own regulatory system. *Ultimately, the legitimacy of an agency depends on the acceptance and understanding of the regulatory process by the consumers and other stakeholders.* The population that is expecting to receive services is directly affected or benefited by the tariffs and quality of service parameters. The impact of infrastructure reform depends on national circumstances, income distribution and growth, and the legal system. Legitimacy and some degree of social acceptance will only be achieved on a record of accomplishments. Staff expertise, learning from regulatory experiences elsewhere, and the use of regulatory instruments like benchmarking are the basis for sound decisions.

28. We have learned that we are not alone. *Regulators are a relatively new group of decision-makers with unique roles in improving infrastructure performance.* Besides acquiring technical skills, regulators must learn to deal with the press, including newspapers, television, and internet suppliers of information. Effectively dealing with the media requires preparation, precision, and perspective. Presenting honest and direct answers that avoid jargon is a first step toward helping reporters grapple with regulatory issues. Spokespersons must be clear about the position of the organization (a regulator wants citizens to understand the role and goal of the agency), then provide specific examples of the impacts of decisions that link directly to the audience. Getting agitated or angry is inappropriate: convey a sense of openness and public purpose.

- 29. Convey the message (vision) to others and listen to others.** *Communication is a two-way street.* From the standpoint of the investment community, credibility requires transparency in the process and consistency in regulatory rules. Investors are not donating their financial resources to a “good cause,” rather they seek returns commensurate with the risks. A credible regulatory system will be perceived as involving lower risks than a regulatory system that is neither understood by stakeholders nor based on well-defined principles. One strategy for establishing a good reputation requires that the agency actively educate different market participants about regulatory objectives. It is useful to walk in the shoes of other stakeholders. Open discussions and careful listening to other points of view helps all participants in the regulatory system gain perspective.
- 30. Teamwork promotes creativity, consistency, and coherence.** *The regulatory process must be a creative process if it is to be effective.* If, on the other hand, the process becomes excessively bureaucratic and hierarchical, problem-solving initiatives will be stifled and staff will learn that pushing reports back and forth establishes job security. Regulatory managers may tend to establish rigid processes that focus on procedures—without adequate consideration for the content of decisions and the incentives reflected in new rules. Over-emphasis on process may promote consistency and insulates the commission from some complaints, but it can set a tone that discourages both internal and external innovation. Commission budgets and internal processes draw upon professional skills to promote good agency performance. Regular meetings on wider issues help organizations develop techniques for thinking strategically about regulatory issues. The recruitment and retention of professional staff requires that the commission have plans in place for training new hires and maintaining the skills of more experienced professionals. We all wear intellectual blinders of one kind or another—based on our discipline world-view (engineering, accounting, economics, law, or management). Given the interdisciplinary nature of infrastructure problems, teams will be needed to identify creative policy options and to select the most effective incentives.
- 31. Many stakeholders must be consulted.** *Some are vocal and others (like future consumers) are not sitting at the table.* Predictability and transparency are two elements that can contribute to good stakeholder relations. An agency needs to be consistent in both its process and in the substance of its decisions. Transparency implies clear rules and functions that give operators confidence in the professionalism of those providing oversight. The public is seldom fully aware of current infrastructure policies and rules. Best practice regulatory institutions need to take a more active role in educating the public and in communicating sector developments to all stakeholders. It is said that “the fewer the facts, the stronger the opinion.” One way to reduce the divisive role of rhetoric is to introduce information about the costs and benefits of different policy options. If the regulatory process is transparent, stakeholders are more likely to support the outcomes.

32. To have an impact, regulators must ask good questions. *Asking questions is not a sign of weakness, but a tool for improving decisions.* With vast amounts of information available on the internet, decision-makers might feel swamped by information, while also knowing that there are specific gaps in their knowledge. Reviewing the consequences of past regulatory decisions allows us to better understand how past information and analyses affected sector performance. Although telecommunications, energy, and water/wastewater have very different production technologies and opportunities for innovation (and competition), all are network industries, and lessons regarding reform, benchmarking, incentives, universal service obligations, and other issues can be applied across sectors. Good decision-making requires skills in “pattern recognition,” so familiarity with developments in one particular sector can improve policies in others.

Five Questions about Infrastructure Regulation, with Some Applications to Water:

A participant in the June 2011 PURC Training Program, Marco Tsuyama Cardoso (Regulation Specialist at the Agencia Reguladora de Saneamento e Energia do Estado (ARSESP—Sao Paulo), asked me to respond to five questions. The questions and answers are below. He translated the material into Portuguese for <http://www.paginasustentavel.com.br/>:

1. At what stage is water service relative to telecommunications, energy, and other infrastructure sectors?

The water sector lags far behind the other infrastructure sectors, especially in the area of wastewater collection and treatment. Telecommunications has the advantage of benefiting from computing power that has doubled every 18 months since the 1970s. Thus, the coverage of cell phones in developing countries has risen dramatically. Even broadband to schools, hospitals, and homes has expanded as businesses support new investments in capacity. Similarly, energy is crucial for industry and commerce, so electricity and natural gas tend to be high priority sectors for government. Private investors see opportunities to invest in generation, transmission, and distribution. Water coverage is substantial in urban areas, but lags in rural areas where customer density is low. And wastewater coverage falls behind all other sectors since the cost of collection and treatment can be more than three times the cost of supplying water. Citizens know that the health benefits of high quality water are substantial, but prices seem to be anchored at low levels—reflecting past subsidization and the unwillingness of elected officials to allow price to cover costs in many jurisdictions. Without political leadership, it is difficult to make water and wastewater high priority sectors in the eyes of citizen/voters.

2. To what extent is the traditional view of regulators balancing the interests of government, consumers, and infrastructure firms still valid?

Regulatory agencies with some independence from political pressures have been viewed as important in promoting cost containment, improving service quality, and expanding infrastructure networks. Autonomous regulatory agencies implement public policy; they (a) have some insulation from day-to-day political pressures, (b) can focus on recruiting and retaining a highly professional staff, (c) promote increased transparency regarding pricing and operational decisions, (d) and facilitate citizen participation. All these activities give credibility to potential investors (including national development banks) and legitimacy in the eyes of citizens. Balancing the interests of government ministries, utilities, and consumers requires that the agencies have autonomy, while remaining accountable to the nation.

However, the three-fold balancing act is somewhat simplistic, since current government officials have time horizons that often do not exceed the next election (suggesting that parties out of power must also be informed of the rationale behind regulatory decisions). In addition, utility managers may (or may not) be carrying out the objectives of those providing capital to the operators (whether public or private); also, the interests of incumbent distribution utilities are not necessarily the same as potential entrants or (as in the case of water) the suppliers of bulk water. Furthermore, current customers represent only part of the consumer side of the triangle: future customers have no votes. Current infrastructure policies have clear impacts on access to and availability of water in the future, so the regulatory agency must represent those who have no current voice in national political discussions. These realities transform what might be viewed as a “balancing act” into a “tug of war” where the regulatory agency gives some weight to future constituencies who are affected by current policies.

3. To what extent is representation of future consumers particularly important in the water sector?

Current customers often have been subsidized through past government programs or soft loans from development banks. These customers receiving service are likely to resent seeing their bills increase so that the firm has the cash flows to expand the network to less dense areas or to low-income populations. So citizens without service today need to be taken into account in current regulatory decisions. Who, other than the regulatory commission, will represent these future customers? Unless distribution systems are maintained and new investments are made, the children and grandchildren of current customers will pay the cost of past operational mismanagement and pricing below costs. The case of wastewater treatment adds a further reason why future citizens (and customers) must be taken into account. Water sources will be contaminated by untreated wastewater discharges. Not addressing this issue today pushes the costs of adjustments on to future customers. Another complicating factor for water is the water resource itself: if current customers treat the raw water as though it was free (paying only for treatment and pipes), then water sources might be over-utilized—raising the costs for future generations. Water has ecological impacts that cannot be ignored: excessive use today means that water resources are unavailable for future consumers. Add to this climate change issues, and we see that representation of future consumers is particularly important in the water sector.

4. Is it important to integrate government policies towards water resources, treatment and distribution of water, and the collection and treatment of wastewater?

Water may be the most complicated of all the infrastructure sectors, since sector performance is influenced by so many factors: water/wastewater utility regulation, environmental regulation (for household and industry discharges), water resource management (monitoring hydrological conditions and allocating water), health regulators (who set standards for potable water), the Finance Ministry (which often provides funds for network expansion), municipal authorities (who often provide governance for local publically owned water utilities), international donors, and the international investment community. Thus, within a nation, interagency task forces can serve as vehicles for bringing together different authorities—limiting conflict (when responsibilities overlap) and addressing gaps in current institutional arrangements. Government funding for water and wastewater investments is a challenge, especially when there are other activities with claims on taxpayers including hospitals, schools, and transportation. If trends in water sector performance cannot be well-documented and baselines are not widely available, then legislators have to wonder whether government funds are being used in a cost-effective manner. When government policies are well-designed and performance impacts are clearly understood, the sector is more likely to obtain support than if the fragmented sector just stumbles along.

5. How can agencies help governments achieve universal access to water and wastewater services?

Governments set policies and regulatory agencies implement those policies. Infrastructure specialists at those agencies need to be consulted by the legislative and executive branches so that public policy takes into account the financial and environmental constraints that affect the availability of water and wastewater services. Agencies collect and analyze data, allowing policies to be based on reality, not on political rhetoric. Agencies need the resources and expertise to provide recommendations to governments regarding the impacts of alternative water policies. For example, we know that targeted subsidies are much more effective than general low prices as mechanisms for promoting universal access. There is reason to be hopeful that economic growth will continue to increase citizen ability to pay for water and wastewater services, but the issues facing decision-makers involve making trade-offs over service quality (in terms of treatment and hours per day of service) and network expansion. The former focuses on current customers, while the latter addresses the needs of those currently without service. Wastewater is particularly difficult in terms of financial sustainability. Nevertheless, we know that the water sector, among all infrastructure sectors, has both symbolic social importance (in terms of citizen access) and economic importance (in terms of health and environmental stewardship). Good governance for regulatory agencies is a foundation for moving forward.

Links to a few resources (from Sandy's Selections at the PURC website):

[Emerging PPP Trends in the Water & Sanitation Sector](#) This paper presents an overview of emerging shifts in approaches to Public-Private Partnerships (PPPs) in the water and sanitation sector. Based on interviews with 21 professionals who are actively involved in the field, the analysis focused on four areas: contracts, regulation, finance, and stakeholder engagement. While there are obvious limitations to using interviews as a methodology, the aim was to determine experts' perceptions of where the trends in PPPs are headed.

[The Operation and Maintenance Network \(OMN\)](#) The Operation and Maintenance Network (OMN) aims to improve information and expertise exchange on operation and maintenance of drinking water supply and sanitation systems. Its tools, knowledge, and other services are focused on the situation in low- and middle-income countries.

[Consumer Participation in Infrastructure Regulation: Evidence from the East Asia and Pacific Region by Elisa Muzzini](#). This paper draws on results of a survey questionnaire conducted among 45 infrastructure regulators in the East Asia and Pacific (EAP) region. It finds that EAP regulators have successfully begun to involve consumers in the regulatory process.

[The World Bank Infrastructure and Law Website](#). This website is designed for government officials, lawyers, and project managers who are involved in the planning, design, and legal structuring of infrastructure projects, especially projects with private sector participation.

Bogetic, Zelijko, and J. Fedderke. 2006. "[International Benchmarking of Infrastructure Performance in the Southern African Customs Union Countries](#)." World Bank Policy Research Working Paper 3987. This paper provides a first, systematic benchmarking of infrastructure performance in the SACU countries in four major sectors.

Another helpful resource on the power sector is the report, [Reforming Power Markets in Developing Countries: What Have We Learned?](#) by John E. Besant-Jones. The paper is a sourcebook of some 240 references that study international experiences in power market reforms. The author was a featured presenter at the 24th PURC/World Bank International Training Program on Utility Regulation and Strategy.

The volume, [Handbook for Evaluating Infrastructure Regulatory Systems](#) (Brown, Stern, and Tenenbaum, World Bank, 2006), provides an overview of why, what, and how to evaluate regulatory systems. A CLASSIC!

International Benchmarking Network for Water and Sanitation Utilities, <http://www.ib-net.org/>.

Check out other web links at www.purc.ufl.edu and at www.regulationbodyofknowledge.org.

