

**Key Lessons from the  
34<sup>th</sup> PURC/World Bank International Training Program on  
Utility Regulation and Strategy  
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Teachers learn from their students, and students learn from each other. As in the past, the 82 participants in this training course identified the key lessons learned over the intensive two-week period. During the concluding session of the program, they shared their reactions to formal presentations and informal networking. The PURC staff appreciates the dedication and energy exhibited by participants: they brought energy, 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 types of 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.

PURC's Director, Mark Jamison, noted that 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 all those involved in these important sectors.

*Sandy*

1. **Be politically aware without being political:** 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.
2. **Regulation implements public policy so bring on board all the stakeholders:** Stakeholders can appeal decisions in most jurisdictions, so it is important to (a) follow the law, (b) base decisions on facts and appropriate methodologies, and (c) communicate the decision in a way that makes the logic and impact clear to all affected parties. “Believing is Seeing”: As Ralph Waldo Emerson said, “People only see what they are prepared to see.” Past experiences place blinders on us. Researchers call this confirmatory bias. We tend to discount or misinterpret facts that are inconsistent with our own world view. A wise person once said: “Don’t believe everything you believe.” It is essential to have an open process that gives stakeholders a wider perspective on what is possible.
3. **Regulation is part of reform program: laws that empower the regulator fit into reform:** Market reforms are like “surgical procedures;” they require preparation and expertise. Healing a “sick” organization requires that both physician and patient agree that there is a problem and that the treatment is reasonable. In addition, an illness involves both physiology and psychology: the body and mind are interconnected in ways we may never fully understand. Similarly, measuring observable outcomes and analyzing accounting data on expenditures may tell regulators little about

the qualitative aspects of an organization. At some point, precise “surgery” may be required—removing and replacing poorly performing components.

4. **Improvements in infrastructure performance require committed regulators (a “new” profession):** This point implies that capacity building and a staff with strong interdisciplinary skills can strengthen the agency. Networking with colleagues from around the world can provide participants with insights about how to implement “best practice” in home countries. No nation has “all” the answers, but the process of sharing ideas and experiences led to ways to promote professionalism, improve regulatory processes, and promote better decisions. 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 the future infrastructure improvements and poverty reduction in the country.
5. **Rate designs need to be simple and understandable (while providing good signals to consumers):** The citizens expecting to receive services are directly affected by tariffs and quality of service. The level and structure of prices determines the financial sustainability of infrastructure networks, so communicating the rationale behind decisions is important. Ultimately, the legitimacy of an agency depends on the acceptance and understanding of regulatory decisions by consumers and other stakeholders.
6. **Government reform requires careful preparation:** Transitions are seldom smooth, but problems can be anticipated. Technical and managerial skills are necessary for an organization to effectively confront new issues. Each person on the professional staff can be a leader, within technical teams or in the context of anticipating issues likely to arise in a rate case. Externally, leaders engage stakeholders in an adaptive process that recognizes the sources of change in the sector and help affected groups confront the key issues. Dan Fessler has this advice for regulators: “Be open to the viewpoints of all and subject to the dictates of none.”
7. **The Foundation for reform must be carefully established:** Infrastructure regulators face similar issues: capital intensity of network industries, public attention given to prices and access, and potential politicization of the regulatory process. Capital attraction via legislative appropriations, development banks and private markets remains a crucial issue for electricity and for water/wastewater. Telecommunications seems to have unique advantages (innovations and consumer willingness to pay) that make capital less an issue for these suppliers. Developed and developing nations face the same problems, though the latter have the added difficulty of obtaining funds for network expansion.
8. **No one size fits all:** There is no simple recipe for infrastructure reform. However, the basic ingredients are the same. No single approach to regulation that works everywhere. The enabling legislation, the judicial system, national income, and investment climate all affect the opportunities facing operators. However, the same regulatory principles apply in most circumstances. Regulatory systems<sup>1</sup> should promote credibility (with investors and government sources of financial support),

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<sup>1</sup> “The term regulatory system is meant to be broadly encompassing. It includes all relevant laws, decrees, and regulations; all regulatory agency activities; all appellate processes; and relationships between regulatory agencies and all other organs of the state on policy and administrative matters relating to the sector that is being regulated.” Ashley C. Brown, Jon, Stern, and Bernard Tenenbaum, *Handbook for Evaluating Infrastructure Regulatory Systems*, World Bank, (2006). p. 11. The entire volume is available at [www.regulationbodyofknowledge.org](http://www.regulationbodyofknowledge.org) and the PURC Supplementary Readings CD.

legitimacy (so consumers feel protected from monopoly prices and from poor service), transparency (so participants know rationale for decisions), and efficiency in the delivery of service (so valuable resources are not wasted through mismanagement or political interference).

9. **Consensus building is important:** There is a role for operator in helping to shape regulation. Firms provide data to the regulator. In addition, regulation is not “command and control. It requires that all parties listen to one another, and negotiate on key points. Infrastructure industries are very complex. 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. Participants need to understand that financial and institutional sustainability are essential for the long term expansion of infrastructure networks.
10. **“Building” a price involves collaboration among accountants, economists, and planning engineers.** Prices that do not reflect costs threaten the financial sustainability of the system. So while regulators must adapt to what is tolerable to citizens, they also must help educate current (and future) customers about revenues matching costs. Regulators earn credibility with government ministries (and investors) and legitimacy with citizens by demonstrating their competence and balance. As Daniel Carpenter writes in *The Forging of Bureaucratic Autonomy* (2001, Princeton University Press): “Bureaucratic autonomy....emerges not from fiat but from legitimacy.” Public communication is central to this process.
11. **Transparency, clarity of responsibilities, accountability and participation are ingredients of good regulation:** 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 balancing the interests of various stakeholders. In addition, leaders should seek ways to become less isolated. Mechanisms for listening to one another should be identified and utilized.
12. **The Hybrid model introduces some incentives for cost containment by combing ROR and profit sharing.** Such schemes place upper and lower bounds on profits, but provide efficiency incentives for a range of outcomes. Thus, regulation is becoming a profession that combines an understanding of engineering, law, accounting, and economics. Organizations in emerging markets are likely to find those skills in short supply. A rate review requires multiple skills: the decision-maker must be able to understand the logic and chains of reasoning behind various arguments in rate reviews.
13. **Decision-makers manage what they measure:** Measurement is crucial for management and for regulators. Benchmarking can be an important tool for making comparisons and establishing incentives. Performance trends over time and relative performance across comparable firms provide valuable information for establishing targets and rewarding managers.
14. **Regulation without benchmarking is useless.** Without benchmarking, neither managers nor citizens have a basis for changing behavior or developing realistic expectations. Thus, it is necessary to develop mechanisms that ensure adequate measurement, verification and incentives. To establish incentives for good sector performance, public authorities must be able to measure performance. Finally, benchmarking utilities is perhaps the only tool regulators have when regulating municipal or state-owned utilities.

15. **Communication is critical for public understanding:** There is no place for “no comment.” In addition, negotiation skills are valuable in the regulatory process. That means being able to assess the situation, knowing your own bottom line (BATNA—best alternative to a negotiated agreement), identifying the interests of stakeholders (substantive, process, relationship, and principles), and setting strong goals. Regulators often serve as mediators when complex issues arise.
16. **Balance predictability with flexibility, engaging stakeholders in the process:** When circumstances have changed, regulations may need to be adapted. However, care must be taken to identify allies and opponents of reform. Karen Johnson noted that “Within the most dysfunctional system, someone is benefitting from the status quo.” Thus, changing current institutional arrangements requires a number of groups to take on those benefitting from low levels of infrastructure performance—whether that is a political group benefitting from a patronage system, a group of workers who benefit from rigid work rules, managers with excessive discretion, or particular customers benefitting from prices below cost. Identifying opponents and potential allies is the first step in the reform process.
17. **Rate design can involve combining methods to determine the rate level and the rate structure:** The former could be based on historical data and the latter could be based on forward-looking information. The design and construction of a building requires that many issues be addressed. Regulation raises even more sets of trade-offs: important issues include rate levels that yield financial sustainability, rate design that reflects cost of service, incentives for cost-containment, and targets for service quality and network expansion. Thus, regulation requires multiple sets of skills. *All-party settlements represent one way to achieve compromises.* 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. Whether handled via alternative dispute resolution procedures or a regulatory hearing, 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.
18. **Rate of return regulation does not have strong incentives for cost containment:** ROR can resemble cost-plus, so efficiency gains may be limited. In addition, utilities cannot be charities (unless the government is willing to subsidize utility activities). The cost of capital is an important factor if regulators want utilities to be able to attract capital. The importance of financial analysis was underscored in a number of sessions related to the time value of money, net present value, deciphering accounting statements, and data collection. For a tutorial on regulatory finance, see a PURC Working Paper by Eugene Brigham and T. Craig Tapley. “Public Utility Finance.” Although it appeared in the *Handbook of Corporate Finance*, edited by Edward I. Altman (New York: Wiley) in 1986, it identifies key issues and provides a nice overview of financial techniques.
19. **Rate design must include pro-poor components:** The social aspects of infrastructure are important; however, subsidies should target access rather than usage if network expansion is the goal. Regulation can facilitate sustainable development that makes infrastructure *Available, Accessible, and Affordable.* Water, energy, telecommunications, and transportation impact the everyday lives of all citizens. Poor performance by suppliers damages the social and economic fabric of a nation. That means regulations seek credibility in the eyes of other groups (investors, government ministries, development banks), legitimacy in the eyes of citizens (acceptance of decisions), and efficiency (reducing waste, expanding access, and improving service quality)

20. **Continuous learning is necessary:** Decision-makers cannot avoid making mistakes, but they must learn from their mistakes and the mistakes of others. 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 and through collaboration with colleagues—via regional networking.
21. **Incentives drive efficiency:** Financial incentives can be related to bonus pools and meeting targets. From a service provider standpoint, a regulatory agency can be a legitimate consumer advocate; however regulators should not forget that ultimately, the main task is to be a high performance advocate. Generally, the regulator is a referee, but sometimes it is necessary to become a player—always seeking “win-win” options. If there is no consumer advocate, the regulator becomes the voice of those without a voice (usually, those without service). Note that future consumers are the most “silent” stakeholders, so financial sustainability cannot be ignored.
22. **Institutions gain expertise over time:** No one has all the answers. 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 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 (including political leaders) will understand the decisions of the water sector agencies.
23. **If the operator can work with the regulator in creating an informed and supportive regulatory climate, the results can be win-win.** Customers, operators, and policy-makers can see improvements in areas they value, whether that is network expansion, cash flow, or political acceptance. However, if the regulatory system is dominated by rhetoric (with minimal reference to reality), all stakeholders ultimately suffer. It is useful to walk in the shoes of other stakeholders. Open discussions and careful listening to other points of view help all participants in the regulatory system gain perspective.
24. **Regulation is a “thankless task” in a sense:** Throughout the program, speakers and participants have noted that there is no ideal way to regulate. “Making all stakeholders equally unhappy” seems to be the best most regulators can do! The legal structure and other aspects of the institutional context limit what a regulator can do in any particular nation. However, it is useful to 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.
25. **Regulatory professionals need to be open to new ideas:** 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 open 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. **Transparency, participation, and accountability are central to good regulation:** Regulators need to be able to explain complex issues to citizens. They must cultivate opportunities for engaging the public in discussions. Citizen input represents an important source of information and a forum for educating key groups. Hearings provide one format for obtaining opinions—though the weight given to some concerns will depend on the financial sustainability of current prices.
27. **Recognize the pervasive role of politics:** “Independent” regulatory agencies are not fully autonomous: they are accountable to legislative, executive, and judicial authorities. They must fulfill the requirements of the law or the decree that established the agency, and decisions are subject to judicial appeals—ensuring that the agency follows due process. Being accountable to other institutions does not mean that regulatory agencies must support a particular political party. Nevertheless, being insulated from direct political pressure does not mean that regulatory leaders can ignore the political climate in a nation.
28. **The regulatory agency is a potential ally of operator:** Industry and regulators need not be adversaries. Regulation is *not* a zero-sum game where consumers lose or operators win. For example, workshops can resolve some technical (factual) issues. It is still important to eliminate any perception of regulatory capture, since citizen confidence in the regulatory system is central to long-term infrastructure development. One of our legacies (besides sound institutions) will be how we have altered the ecological features future generations will depend upon for their health and well-being. The political time horizon may be until the next election, but our social and economic time horizons must be much longer.
29. **Inefficiency of operator can often be traced to the regulator:** Poor performance needs to be publicized. If the regulator does not do so, and cannot create good incentives—then the system is failing citizens. If the regulator lacks data, resources, or tools to incentivize operators, then the regulator needs to make the public (and the legislature) aware of these structural problems.
30. **Learning is central to improving infrastructure performance:** Learning can be choked off if the process does not air potential blunders or oversights. Reviewing the consequences of past decisions allows a contractor to gain insights into how to improve performance. The same applies to a regulator: critiques of previous strategies enable us to better understand how past information and analyses affected sector performance. Organizational recruitment and retention depends on creating a culture of continuous improvement. The Body of Knowledge on Infrastructure Regulation at [www.regulationbodyofknowledge.org](http://www.regulationbodyofknowledge.org) provides one set of resources for internal training programs and for addressing frequently asked questions.
31. **Technical skills are necessary but not sufficient for improving sector performance:** So-called “soft” skills like communication, leadership, and creativity are also necessary. Agencies that operate in silos lose the synergies that could be drawn upon through interdisciplinary task forces. Leaders in the agency must also cultivate leadership skills that enable them to deal with all stakeholders. A strong and technically solid regulator promotes confidence in the regulatory system. One way to promote credibility is to publish and adhere to schedules.
32. **Communication modes need to be utilized by regulators:** Communications to groups external to the organization are important in that they represent a key way the public becomes informed about agency decisions. Press releases should avoid jargon and provide the following: an honest and direct answer, a message that explains the role or goal of your organization, specific proofs of your point,

links to listeners, and a clincher that reinforces your message. Personal communications with colleagues can also benefit from this approach.

33. **Reform is the *tool* not the objective.** Ultimately, performance improvements are what matter. The PURC Training course focused on *incentives*, *information* needs, *institutional* development, *ideology* (values), and *implementation* issues. The sharing of experiences promoted valuable exchanges of *ideas*. Sometimes we think we have the answer and begin to move on. However, as W.S. Coffin noted, “Unanswered questions are not as dangerous as unquestioned answers.” We need to be sure our answers (and strategies) are based on solid analysis and not on wishes, ideology, or half-baked theories.

### “Bonus” Lessons

**Policy Implementation requires Leadership:** Mark Jamison and Araceli Castaneda wrote a recent PURC Working Paper entitled *Reset for Regulation: Leadership for a Time of Constant Change*. The abstract reminds us to develop three perspectives: “The first is to focus on next practices, not best practices. Best practice is about following in someone else’s footsteps, whereas next practice is about going into areas where no one has gone before. The second is focusing on why rather than focus on what. Asking “What should we do next?” emphasizes practice whereas asking “Why have certain practices been successful?” searches for underlying needs and context. The third juxtaposition is between leading and leadership. A leader provides direction, which is proper when the right direction is known. In contrast leadership mobilizes people to tackle difficult and often ambiguous problems and circumstances.”

**Integrated information systems for Managers and Regulators:** Data represent the raw material for decision-making. Investment decisions cannot be made in a vacuum. Maintenance requires an asset registry and information about reported leaks and customer complaints. Multi-period information on operations and financial conditions is essential for sound decision-making. Retaining historical data provides analysts with the opportunity to identify trends and conduct more robust statistical analyses. When managers make investment and operational decisions, they need to be clear about the objectives of the project, the techniques being used, and the level of detail required for the dataset. The absence of such specificity limits accountability and diminishes organizational learning.

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

[Africa's Infrastructure: A Time for Transformation](#) This study is part of the Africa Infrastructure Country Diagnostic (AICD), a project designed to expand the world's knowledge of physical infrastructure in Africa.

services provider and who are committed to hiring an Operations Manager.

[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.

[Tariff Setting Guidelines: A Reduced Discretion Approach for Regulators of Water and Sanitation Services](#) - By Chris Shugart and Ian Alexander. The objective of the project 'Tariff Setting Guidelines - A Reduced Discretion Approach' is to prepare a set of sound, well-specified guidelines that can be used by regulators to improve the predictability and transparency of the tariff-setting and adjustment process and thus reduce uncertainty.

[The World Bank Infrastructure and Law Web site](#). 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, Zeljko, 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.

[Benchmarking Data of the Electricity Distribution Sector in the Latin American and Caribbean Region, 1995-2005](#). This web site enables users to conduct cross-country and cross-utility comparisons.

Gratwick, Katharine Nawaal and Anton Eberhard. 2007. "[An Analysis of Independent Power Projects in Africa: Understanding Development and Investment Outcomes](#)." University of Cape Town, Graduate School of Business, MIR Working Paper. This document provide a valuable overview of IPPs.

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!

Vagliasindi, Maria (2008), "The Effectiveness of Boards of Directors of State Owned Enterprises in Developing Countries", *Policy Research Working Paper*, No. 4579, World Bank, Washington, D.C. Available at:  
<http://elibrary.worldbank.org/deliver/4579.pdf?itemId=/content/workingpaper/10.1596/1813-9450-4579&imeType=pdf>

Berg, Sanford (2013). *Best practices in regulating State-owned and municipal water utilities*, Report to the United Nations Economic Commission for Latin America and the Caribbean. Available at:  
<http://www.eclac.org/publicaciones/xml/1/49891/Bestpracticesinregulating.pdf>.

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

Check out other web-links at [www.purc.ufl.edu](http://www.purc.ufl.edu)