

**Key Lessons from the
36th 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 76 participants from 32 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 key 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 involve how regulators, representatives from government ministries, infrastructure managers, and consumer advocates need 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. Some of the elaborations on the points identified by participants are drawn from Key Lessons from previous course deliveries. I take full responsibility for errors of interpretation in this summary of *Key Lessons for June 2014*.

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- 1. *Problems in different countries are similar across the world.*** This pattern of arises because network industries share common problems. Sector regulators can benefit from lessons learned in other sectors and other countries. Regulatory networking yields lessons related to constructing sustainable public-private partnerships, dealing with emerging technologies, addressing the needs of stakeholders, or applying methodologies to analyzing costs or the impacts of subsidies. Both multi-sector and single-sector agencies face challenges. The former can utilize professionals across several sectors and may be able to better balance the influence of politically powerful sector interests. The latter are likely to have specialized staff who can tackle sector-specific issues. Both types of agencies will still have to collaborate with other governmental agencies (addressing environmental discharges, spectrum allocation, and water resource allocation, for example).

2. ***The most critical infrastructure problems are not technical; they go “beyond pipes” (and engineering) to developing adaptive approaches to managing issues.*** It is said that intelligence involves knowing “what is,” while wisdom involves knowing “what matters.” Factual and technical information are important, but it is essential that those implementing public policy engage stakeholders in dialogues and to develop strategies that draw upon new learnings regarding factors that affect sector outcomes. There are many potential policy objectives, but not all can be given equal weight. The weights depend on current levels of performance, the particular sector, and citizen attitudes. All stakeholder groups affected by infrastructure should be clear about their objectives and the processes used to meet those goals. Regulators need to work with stakeholders to educate those affected by price, quality, and network coverage. Since infrastructure is so important for economic growth and social cohesion, public policy generally attempts to promote network expansion. The sector requires significant capital investments, so decision-makers need to prioritize their objectives and carefully define the problems they face. Companies, ministries, and regulators all shape the way issues are defined and addressed in the regulatory process.

3. ***It is useful to go back to the basics – don’t get too bogged down in the technical details. Revisit the regulatory principles.*** Regulatory systems need to be understood by citizens. Public education becomes one task for the agency. Technical jargon gets in the way of public understanding. While the news media may highlight what is sensational, reporters and editors are aware of the crucial role of infrastructure in society’s well-being. Without good press relations, media coverage will be biased; citizens and politicians will not support needed reforms. Daniel Carpenter in *The Forging of Bureaucratic Autonomy* (2001, Princeton University Press) stated:

Bureaucratic autonomy . . . emerges not from fiat but from legitimacy. It occurs when political authorities see it in their interest to defer to agency action, or when they find it too problematic to restrict it. They defer to the agency because (1) failure to do so would forfeit the publicly recognized benefits of agency capacity, and/or (2) the agency can build coalitions around its innovations that make it costly for politicians to resist them. These coalitions are part of the agency’s reputation; reputations are not ethereal but are embedded in network-based coalitions.

Without a clear understanding of regulatory principles, agencies will have difficulty establishing favorable reputations. 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 provide the foundation for the future infrastructure improvements and poverty reduction in developing countries.

4. ***Regulation is a social-political problem. The regulator deals with the links between technical challenges and the institutional context (involving governance, incentives, accountability, and other factors)*** Maps might provide travelers with information about ways to reach a particular destination, but the actual route will depend on topography, traffic congestion in the available routes, re-fueling opportunities, and weather. Similarly, regulators and managers will have a number of alternative ways to address infrastructure issues. 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 (including political leaders) will understand more clearly how decisions of infrastructure sector agencies establish incentives for improved performance.

5. ***Regulation is complex, therefore multiple disciplines are required for addressing issues. Sound decision-making calls for a mix of skills, including negotiation.*** No single skill set is adequate for addressing pricing, service quality, investment, and other regulatory issues. Engineers, lawyers, economists, accountants, and specialists from other disciplines can be brought together to tackle complex issues. Agencies and operators need professionals with leadership skills, experience in negotiation, and proficiency in communication. Regulators often serve as mediators when complex issues arise. Robert Thomas noted that “soft” does not mean “easy” or “unimportant.” Negotiation and mediation skills are valuable in the regulatory process. That means being able to assess the situation, knowing your own wants and needs (BATNA—best alternative to a negotiated agreement), identifying the interests of stakeholders (substantive, process, relationship, and principles), and setting strong goals.
6. ***Take care to make press conferences meaningful for gatekeepers and for citizens.*** The press represents one vehicle for communicating with those groups concerned with infrastructure performance. 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. Note that the question is not “Should there be regulation?” Rather, policy-makers should ask, “What are the limits to regulation as an institution for addressing infrastructure issues? What are the alternative arrangements?” There is solid empirical evidence that a good regulatory system improves sector performance. This point needs to be communicated to different external stakeholders through a variety of platforms, including press conferences. Issues need to be aired outside and within organizations. In summary, communication is an essential part of transparency.
7. ***“Independence” promotes long-term decision-making to the extent that autonomy facilitates objective analysis and rule-making.*** A regulatory agency created by law or executive order is embedded in an inherently political system (affecting commission appointments, funds for agency operations, staffing, and other elements). “Absolute” independence is impossible (and probably undesirable), but being shielded from daily political in-fighting is essential if the agency is to be successful. Influence comes in many shapes and sizes. For example, 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 some degree of insulation from powerful stakeholders.

8. ***Vertical integration may be the best organizational structure for some jurisdiction, but not for others.*** Particularly for small infrastructure systems, a vertically integrated operator may be able to better coordinate activities across stages of production and plan for new facilities. For larger systems, monopoly components can be separated from competitive activities. Such vertical dis-integration can involve a loss of economies associated with system planning. However, with separate charges for each component (unbundling), stages of production that are potentially competitive can attract entry—potentially leading to improved industry performance. “With unbundling, the regulator may allow the provider of the non-competitive component to provide a single service that combines the competitive and non-competitive portions of the service, but the regulator would also require the operator to provide rivals with equal access to the essential facilities under the same terms and conditions as the operator does its own competitive service. This is a common approach in telecommunications.” [from BoKIR]
9. ***People skills are extremely important for success: that means that organizations need systems that focus on professional recruitment, training, and retention.*** Budgets are always tight. Capacity building represents an investment in people. Leadership requires that decision-makers make deposits into emotional bank accounts; otherwise, supporting staff cease operating with enthusiasm. Professionals with training in any specialty need to be able to participate in teams. That means professionals in agencies and operators cannot work in silos. The organizational structures must encourage cross-training and respect for related fields. When dealing with complex infrastructure issues, we all could benefit from a little humility. Agencies that operate in silos lose the synergies that could be drawn upon through interdisciplinary task forces. The development of professional staff members requires opportunities for updating their skills. In addition, leaders should seek ways to become less isolated. When bureaucracies become very comfortable with hierarchical arrangements, decision-makers become insulated from the real issues.
10. ***There is no best model for the world: local circumstances (cultural, historical, political, and economic) will determine which strategies are worth pursuing.*** Current conditions set boundaries on what is politically possible. For example, if private participation occurs or commercial bonds are being issued, citizens may not realize that past funding arrangements were not sustainable. If price is initially far below cost, citizens will perceive private participation as the reason prices go up. The resulting citizen unrest reflects several failures. First, the concessionaires may have unrealistic expectations regarding cash flows. Second, the government may have done a poor job of educating citizens regarding the unsustainability of the status quo. Prices that are below cost and national budget constraints would have led to slow growth in coverage and continued low-quality service in the absence of reform. Furthermore, political promises often establish unrealistic citizen expectations: the result is disappointment for all stakeholders, including elected officials. Regulators can contribute to universal access by promoting more efficient arrangements for infrastructure service delivery and by grounding citizen expectations in reality. For more information, see

a series of Frequently Asked Questions on PPPs which are available at www.regulationbodyofknowledge.org (BoKIR).

- 11. *Leaders must learn to think politically without becoming political.*** Regulation is not divorced from politics, but it should not be married to politics either. One lesson emphasized in PURC training courses is that “regulators need to think politically without being political.” Given the social importance of access to infrastructure, those involved in making the regulatory system work cannot ignore 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: ideally, agencies should be insulated from day-to-day political meddling (including patronage requests). Nevertheless, regulatory leaders cannot ignore the political climate in a nation.
- 12. *Consider leaving your comfort zone: continue seeking new ideas that will “work.”*** We all like to think that we know a lot. Regulators must recognize the existence of information asymmetries: managers know far more about the ease or difficulty of containing costs and improving performance. Nevertheless, international case studies can help people see how questions are addressed in different settings. 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 (current) world view. Cases from other nations remind us that we all wear blinders and need to interact with others to better understand our own situation. A wise person once said: “Don’t believe everything you believe.”
- 13. *Communication is key aspect of the regulatory system.*** Good communication is as important as good technical decisions. The resolution of infrastructure problems requires many disciplines, including law and engineering. However, technical jargon can get in the way of good communication, especially when conveying information to the public. For example, economics reminds us about the opportunity costs of making particular decisions, where these costs reflect the legal, financial, and technological constraints facing decision-makers. When writing a press release, instead of using technical terminology, like opportunity costs or consumer surplus, the press release should focus on “cost of production and customer benefits.” *Soft skills* like creativity and communication are tools needed by regulators and operators.
- 14. *In a network setting, whatever the market structure, when government and private funding is unavailable, regulators need to address performance shortfalls.*** Key performance indicators (KPIs) point to the success or failure of the current regulatory system, including the market structure. Regulators should be viewed as implementing policy, since developing and articulating policy is the responsibility of the key political leaders in the executive branch and the legislature. In addition, implementing rules and enforcing them often involves developing “micro-policy” that fleshes out broad policy pronouncements. Furthermore,

regulators often have expertise lacking in other branches of government. Thus, regulatory reports and public meetings provide platforms for identifying issues and the implications of alternative approaches to resolving those issues. Similarly, operators can take initiative in reforming internal processes and external rules affecting their performance.

- 15. *The relationship between the operator and regulation need not be adversarial.*** Regulators and operators need not be adversaries: they share a common objective—expansion of the network and improved operating performance. Other stakeholders, like government ministries, unserved customers, suppliers of capital (both public and private), and potential entrants, all have roles to play in determining the success of the sector. In addition, delays are not neutral with respect to impacts. Special interests favoring the status quo (over reform) are content with current poor performance. They do not want regulatory leaders who set goals, implement programs, and evaluate the impacts of decisions.
- 16. *Being a regulator is a “public trust” (requiring ethical behavior) and necessitates gaining the public’s trust.*** Behavior that is appropriate in one nation may be perceived as unethical in another. Standards for open meetings, negotiations, and hiring are not universal. Nevertheless, as Ken Kernaghan and John Langford note in their book, *The Responsible Public Servant*, actual and potential conflicts of interest arise from self-dealing, accepting benefits, influence peddling, using employer information or property for private advantage, using confidential (proprietary) information, outside employment, and post-employment activities. It is said that “believing is seeing”: preconceptions regarding impropriety lead to the perception of impropriety.
- 17. *Manage the process cost-effectively: include all stakeholders and exercise leadership.*** Mark Jamison and Araceli Castaneda wrote a 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.”
- 18. *It is important to develop and implement incentive programs for operators, whatever the ownership arrangements.*** Every regulatory decision establishes incentives that improve or weaken sector performance. Setting realistic targets for operators is a key problem for regulators. Without benchmarking, cost of service regulation would only enshrine high costs in high prices. More powerful incentives for cost containment are achieved by price caps that reduce prices for inefficient firms. For privately-owned firms, this can provoke investors to pressure management to improve performance. However, for state-owned utilities, low prices also punish customers who will now receive poor service and punish unserved citizens, since less funding is available for network expansion. Benchmarking improves

decision-making when it identifies high performance infrastructure operators. Potential donors and Finance Ministries want to ensure that operators who will not waste funds. In addition, the process identifies utilities with weak performance; this provides citizens with a basis for pressuring politicians to replace poor managers of municipal and state-owned enterprises.

19. ***Rigor in infrastructure analysis is essential, so capacity-building must be emphasized by leaders: there is something new to learn every day.*** Of course, while rigor is essential, perfect analysis is the enemy of good analysis. There will never be enough information for decision-makers to have complete certainty regarding the potential performance of operators or the best rules. If studies take so much time that decisions are delayed unnecessarily, that is a sign of rigor-mortis (death), not rigor. However, the same regulatory principles apply in most circumstances. For example, holding managers accountable for weak performance is only possible if data on trends and best practice are widely available for analysis. Speakers in the training program have underscored the importance of data collection, verification, and analysis. Without sound evidence-based decisions, long-term investments will not be made: decision-makers are likely to conclude that there are no payoffs to those taking on the risks and responsibilities for new infrastructure programs.

20. ***Avoid problems by establishing a clear regulatory framework (where the law is clear about roles and responsibilities. Furthermore, the regulator should avoid micromanagement.*** Regulation can improve sector performance if pitfalls are avoided. However, the regulatory agency is only part of the “regulatory system” which includes the laws, stakeholder attitudes, appeal procedures, citizen expectations, and political stability or instability. 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. The job of the regulator can be viewed as balancing the interests of consumers, operators, and government. These stakeholders have legitimate concerns: some citizens may not be receiving service, the financial sustainability of operators may be problematic, and elected political leaders worry about regional development or may seek low prices for current customers. It has been said that, ultimately, “the role of the regulator is to disappoint all stakeholders equally.”

21. ***Effective regulation requires expertise, predictability, transparency, and leadership.*** Concepts and principles can apply across nations, but the unique national settings (traditions, legal mandates, and public perceptions) require tailoring principles of autonomy, participation, and transparency to the national context. This requires transparency and consistency in decision-making, in addition to participation by stakeholders in the process. Regulatory systems should promote credibility (with investors and government sources of financial support), legitimacy (so consumers feel protected from monopoly prices and from poor service), transparency (so participants know the rationale for decisions), and efficiency

in the delivery of service (so valuable resources are not wasted through mismanagement or political interference). An agency needs to be consistent in both its processes 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. Of course, sound decisions require excellent support staff. To recruit talented professionals requires salaries commensurate with the job requirements. Retaining outstanding staff requires that professionals feel valued and are actually rewarded for their job performance. An annual Award for Excellence represents one way to recognize outstanding contributions to the agency's mission.

- 22. *Regulators need to communicate with stakeholders if their roles and goals are to be perceived as relevant by the citizenry.*** All the parties to a decision should understand the implications for high and low performance. All such plans create incentives affecting cost containment, service quality, and network expansion. Rate of return regulation (ROR—also called cost of service regulation) is a regulatory method that provides the utility with the opportunity to recover prudently incurred costs, including a fair return on investment. This mechanism limits the profit (and loss) a company can earn on its investment. Regulatory lag and special incentive plans are often used to offset the disincentive to minimize costs under this mechanism. A price cap (PC) formula is a precise expression denoting the constraint facing a firm over the period of a price control. An example of a simple version of the formula would be $RPI-X+K+Q$, where the terms reflect adjustments for retail price inflation (RPI), relative productivity advance (X), network expansion targets (K), and improved quality of service (Q). In practice, the formal representation of the formula can be quite complicated, especially when there are different constraints on particular baskets of commodities. Both types of plans start with initial prices based on a formula for determining “revenue requirements.” The different methodologies then diverge, depending on how often the prices are revisited and how the prices are set for succeeding periods. Hybrid Plans and Yardstick Regulation both can involve benchmarking to establish ranges for acceptable performance.
- 23. *Avoid small fights: develop creative incentives for parties to resolve disputes themselves.*** Posturing is not recommended, whether by regulators or operators. Both should cultivate opportunities for engaging the public in discussions. Issues should be framed in a way that links regulatory rules to expected performance improvements. In addition, 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. Note that autonomy is earned over time, not “granted.” The creation of a regulatory system results in some groups losing the authority they had previously exercised. By demonstrating professionalism and impartiality, the new “player” (the regulator) can earn legitimacy. Sometimes a consensus can be reached via an all-party-settlements process that resolves stakeholder disputes.
- 24. *Continuous engagement with stakeholders implies that workshops and other meetings need to be informative and useful to participating groups.*** Capacity building is essential if support staffs are to have technical skills and motivation to develop evidence-based

recommendations. 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. Multiple disciplines (including engineering, economics, finance, accounting, and management) are necessary to bring a wide range of perspectives on individual issues.

25. *Delays are seldom neutral in terms of their impacts on different stakeholders: address problems in a timely manner and move forward, even if the steps are small.* Schedules matter: they establish expectations and require stakeholders to adjust their activities to meet the schedules. It is easy to think that we have made great progress, when we are unaware of what regulators or managers in other countries are doing. Sometimes we think that we have fully addressed an issue in a timely manner, and then we learn from others that some very creative approaches are being implemented elsewhere. Agencies and operators must be in a continuous state of learning. Maintaining consistency with past decisions and yet having the flexibility to deal with new situations (or crises) require carefully balancing predictability with adaptability: all the while, learning from our mistakes and from the mistakes of others.

26. *Bring skills and tools to the table, so decisions are evidence-driven, rather than determined by political power-plays.* It is easy to think that we have made great progress; yet we may be unaware of what regulators or managers in other countries are doing. Sometimes we think that we have fully addressed an issue, and then we learn from others that some very creative approaches are being implemented elsewhere. Agencies and operators must be in a continuous state of learning. Maintaining consistency with past decisions and yet having the flexibility to deal with new situations (or crises) require carefully balancing predictability with adaptability: all the while, learning from our mistakes and from the mistakes of others. 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 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. “The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.” (M. Proust)

27. *Regulation is about balancing competing interests.* It has been said that “the role of the regulator is to disappoint all stakeholders equally.” 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. Targets should be set based on reality, not rhetoric. Otherwise, stakeholders become anchored to positions that are totally infeasible or inconsistent with reality. Of course, a regulatory agency is only part of the *regulatory*

system which includes the laws, stakeholder attitudes, appeal procedures, citizen expectations, and political stability or instability. Stakeholders have legitimate concerns: some citizens may not be receiving service, the financial sustainability of operators may be problematic, and elected political leaders have concerns regarding regional development or may seek low prices for current customers. 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. Infrastructure concepts and regulatory strategies have to “fit” the local situation, providing win-win outcomes when possible. Dan Fessler has said, “Be open to the viewpoints of all and subject to the dictates of none.”

28. *Sound decision-making requires knowledge, attitudes, motivation and skills.* Clearly, micro-management is inappropriate, but an awareness of production processes is essential if incentives for cost-containment, improved service quality, and network expansion are to be effective. So knowledge is crucial: decision-makers need to track innovations that affect the industry. Market reform is not an end in itself but a means to improve sector performance. For example, in some countries, reforming the wholesale electricity market is a key to promoting efficiency, both in terms of operations and new investments. Regulators should be viewed as implementing policy since developing and articulating policy is the responsibility of the key political leaders in the executive branch and the legislature. However, regulators often have expertise lacking in other branches of government. Thus, regulatory reports and public meetings provide platforms for identifying issues and the implications of alternative approaches to resolving those issues. Similarly, operators can take initiative in reforming internal processes and external rules affecting their performance.

29. *Infrastructure decision-makers have ways to manage problems they face. Networking can help identify persons who can assist in resolving issues.* Don’t re-invent the wheel: standardized systems abound (for accounting frameworks, web design, tracking the rule-making process, and other regulatory activities). Networking with colleagues from around the world provides participants 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 leads to ways to promote professionalism, improve regulatory processes, and develop better decisions. Similarly, regional regulatory associations act as clearinghouses for studies and reports. They promote capacity building through conferences and technical workshops. Regional working groups for operators serve a similar function, facilitating the exchange of ideas across national boundaries. Learning from counterparts around the world represents one way to strengthen organizational performance. Now is a good time to investigate the material available at www.regulationbodyofknowledge.org.

30. *Operators should manage their relationship with regulators.* Many of the lessons identified by participants focus on the role of regulators. However, operators are ultimately the ones delivering infrastructure services and attracting funds for investment (from capital markets, development banks or the national treasury). Of course, executives manage what they measure, so data-driven companies are more likely to be successful than those that play political games. Infrastructure managers have information about performance and business plans that warrant attention and public discussion. So there must be arm’s length relationship

(not a bear-hug that could be perceived as regulatory capture). Furthermore, managers have an obligation to communicate the financial and performance implications of different options being considered by regulators. Operators need to take an 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 present information about the costs and benefits of different rules that are being considered by regulators.

31. *If you are regulating successfully, don’t expect compliments or high praise.* However, the process is central to the substance of decisions. Adjudication of specific rate cases (via formal hearings or all-party-settlements) and rule-making (for addressing emerging sector issues) enable regulators to gather information and make decisions regarding both cases and problems facing policy-makers. Thus, schedules for the hearing process need to be developed, disseminated and adhered to: delays have differential impacts on different stakeholders. Note that many citizens do not understand the importance of financial sustainability for network expansion and good quality service. Terms like weighted average cost of capital (WACC), cash flows, operating expenses, and net present value are not typically discussed around the dinner table, yet these financial terms are central to sound regulation. Helping the public understand the implications of excessively low prices is a challenge, but one that needs to be addressed by regulators, public officials, and managers. Thus, “neutral” or balanced decisions will tend to focus on substantive issues, weighing the consequences of alternative rules in terms of national priorities (as reflected in legislation). A regulatory process that adheres to schedules and results in timely decisions is important. However, substance (attention to consequences) and public communication are even more important.

Concluding Observations

As a kind of summary of the points identified by participants, here are six elements that (in my opinion) are necessary for strong infrastructure performance:

Information—*Information matters*: the collection and authentication of data is necessary to identify trends, understand current patterns of performance, and determine realistic targets for utilities; technical skills and on-going capacity-building can support such initiatives.

Institutions—*Organizations matter*: the sector regulatory commission is one component of the regulatory (and governance) system, which includes the legislature, courts, utilities, unions, and the laws that establish roles and responsibilities for these institutions; inter-institutional collaboration is essential for improved sector performance.

Incentives—*Incentives matter*: decision-makers behave in accordance with payoffs associated with different outcomes; every regulatory rule rewards or penalizes actions affecting utility performance.

Ideas—*Ideas matter*: each of us brings a conceptual framework to our decisions; new perspectives can serve as catalysts for activities that improve the operation and financial sustainability of water utilities.

Ideals—*Values matter*: when we are clear about our objectives and communicate those priorities to stakeholders, the resulting dialogue can clarify our goals and promote greater consensus regarding sector objectives.

Individuals—*People matter*: ultimately, leadership is essential for improved sector performance; no matter how dysfunctional or inefficient current arrangements are, someone is benefiting from them—which implies that overcoming institutional inertia requires strong leadership.

Policies are not self-implementing. They require leadership. Some of the leaders who will make a difference in their nation's economic and social growth participated in the PURC Training Program. Hopefully, the discussions equipped them to be more effective when they returned to their nations—to continue the *initiatives* identified during their stay at the University of Florida.

Additional Resources

Brown, Ashley C., Jon Stern, and Bernard Tenenbaum (2006). [Handbook for Evaluating Infrastructure Regulatory Systems](#) The World Bank: This volume provides an overview of why, what, and how to evaluate regulatory systems. A CLASSIC! (This Handbook appears as a reference on the Body of Knowledge on Infrastructure Regulation (BoKIR) webpage.)

Tenenbaum et al. (2014): *From the Bottom Up: How Small Power Producers and Mini-Grids can Deliver Electrification and Renewable Energy in Africa*. You can find it as a reference at the bottom of the BoKIR webpage:

<http://regulationbodyofknowledge.org/faq/renewable-energy-and-energy-efficiency/if-the-government-decides-to-use-power-purchase-agreements-as-a-tool-to-obtain-renewable-energy-what-are-the-features-of-ppas-that-must-be-monitored-by-regulators-and-the-steps-that-should-be-taken/>. Also, check out the FAQs on renewables at www.regulationbodyofknowledge.org.

Berg, S. (2013). *Best practices in regulating State-owned and municipal water utilities*, Report to the United Nations Economic Commission for Latin America and the Caribbean. http://warrington.ufl.edu/centers/purc/purcdocs/papers/1307_Berg_Best_practices_in.pdf. This report is also relevant for state-owned energy distribution companies.

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