Teachers learn from their students and students learn from each other. Participants in each training course identify key lessons learned over the intensive two-week period. The 78 participants in the January 2004 course shared their reactions to formal presentations and informal networking during the concluding session of the course at the University of Florida. Lessons are presented in the order they were suggested rather than according to the topical outline of the course: (1) Market Structure Reform and Regulation of Network Industries, (2) Financial Analysis for Utility Regulation, (3) Principles and Application of Incentive Regulation, (4) Non-Price Aspects of Utility Regulation, (5) Managing the Introduction of Competition in and for the Market, (6) Rate Structure, and (7) Managing the Regulatory Process.

We hope that the annotated list promotes further discussion among all those involved in these important sectors: regulators, utility managers, government ministries, and consumers. PURC's staff appreciates the dedication and energy exhibited by participants in the 15th Training Program. Attendees shared their expertise and experience with one another. In addition, they asked good questions and followed up with examples from their countries. The participant observations are linked to strategies that promote sustainable systems.

1. **Market design represents an important issue for network industries.** However, there are no easy solutions to the extent of unbundling that makes economic sense. Market size, economies of scale and scope, and institutional constraints determine the degree to which entry barriers or specific behavioral constraints are warranted.

2. **Market forces will drive the global economy.** Nations are not powerless in responding to the important drivers of globalization: technological change, trade, the need for international capital, and desires for the transfer of best practice managerial skills across sectors and countries. Nevertheless, government intervention needs to be utilized with great care-avoiding regular policy reversals and crony capitalism (special treatment for politically favored individuals). Although international market forces can create economic dislocations and raise issues regarding groups disadvantaged by change, creating barriers and sitting on the international sidelines is likely to be a recipe for stagnation.

3. **The international exchange of ideas is crucial for regulators.** No one group or nation has all the answers. Those implementing public policy in infrastructure have much to learn from their counterparts elsewhere: lessons regarding rate designs, stakeholder participation, transparency, and benchmarking, to list a few issues.

4. **Incumbent suppliers have a monopoly on certain types of information.** Making information available to regulators does not necessarily put suppliers at a bargaining disadvantage. Furthermore, to establish a sense of trust and sustainable regulatory arrangements, regulated utilities need to demonstrate their commitment to good performance. When outstanding performance is demonstrated, regulators should reward those firms delivering quality services at reasonable prices.

5. **Regulators can promote strong sector performance via support of private participation.** The profit motive does create strong incentives for reducing costs and meeting customer needs. Privatization does not solve infrastructure investment problems if prices do not reflect costs and unrealistic targets are established. However, given the budget problems of national, state, and municipal governments, network expansion is likely to require funding sources beyond governments. Investors within the country represent a potential source of funds, but if the capital needs are substantial, international capital markets represent a source of funds.

6. **Decision-makers need to have clear objectives.** If goals are not prioritized, decision-makers cannot be held accountable for not meeting targets, nor can they be credibly rewarded for
exceeding targets. National dialogues, elections, and political debates determine what issues are of greatest importance for the welfare of citizens. Once a national consensus is reached and goals have been set, regulators are in a position to implement policy through regulatory procedures and rules that enhance sector performance.

7. Benchmarking allows us to evaluate the relative performance of firms. Performance comparisons are an important tool in the regulatory toolkit, enabling yardsticks to be established for rewarding strong performance. In addition, firms need to be conducting benchmarking studies-within their organization (so as to monitor internal performance) and across organizations (to learn best practice).

8. Organizations should not become excessively bureaucratic. Internal accountability requires clearly established lines of communication. However, teams can do more than individuals, so collaboration should be encouraged within regulatory commissions and infrastructure firms. The resulting interactions mean that those with information and expertise are in a position to contribute to the development of policies.

9. To finish early, begin early. It is important that individuals and organizations adhere to schedules and set reasonable deadlines. Time is money—so strategic delays always affect market participants in predictable ways. If stakeholders (or regulators) are able to manipulate schedules, the system will lack credibility to investors and will lack legitimacy for consumers.

10. Organizations need to regularly monitor stakeholder relationships to determine whether existing channels of communication promote the fruitful exchange of ideas. In addition, communications shape expectations and inform key constituencies of developments. If regulators are not sensitive to concerns of external groups, those groups are likely to turn to other avenues for influencing policy.

11. Independence is important but difficult to achieve. This point has to be balanced against the previous observation about how regulators relate to stakeholders. If the commission is perceived as "captured," then it loses credibility. If the commission does not engage stakeholders in serious dialogues and negotiations, it will be ineffective because disputes will erupt in other forums—such as court appeals or legislative pressures. Remaining arms-length from daily political battles but engaged in national policy discussions requires both the appearance and fact of some autonomy.

12. Expertise is needed if commissions are to effectively carry out their responsibilities. The issues associated with infrastructure span accounting, finance, economics, law, engineering, and management. No one person encapsulates all the knowledge required to develop sound rules and implement policies. Continuing education needs to be part of each organization's mandate.

13. Incentive regulation can improve sector performance. Any rate-setting mechanism that links rewards to desired results or targets by setting rates (or rate components) for a given time according to external indices rather than a utility's actual cost of service gives utilities better incentives to reduce cost than cost-of-service regulation. However, regulatory lag and special incentive plans are often used to offset the disincentive to minimize costs under cost-of-service.

14. Decision-makers need to have accurate information. Information for making a decision is never perfect. Information is generally incomplete (compared with an ideal data base), but when it is also inaccurate, the inadequacies begin to have a significant effect on decisions.

15. Regulators and managers need to be able to negotiate skillfully. They also need the ability to make commitments. Negotiation is a process whereby agreement is reached among a group of stakeholders. If the outcome is not win-win, it is unlikely to be sustainable.

16. Decision-makers must be able to communicate with a wide range of audiences. Technical analysts, policy-makers, media reports, public opinion leaders, and voters all have an interest in regulatory decisions. Therefore, the justification for a ruling and the implications of that decision need to be communicated to different groups in a carefully orchestrated way: not to manipulate, but to inform.
17. Regulators want utilities to use best practice. However, the regulator is not a policeman and a utility is not a suspect. These two groups need to develop harmonious relationships that avoid confrontation in adversarial settings. When there are clear disagreements and no room for further negotiation, the regulatory decision must be made and defended against appeals.

18. Privatization or liberalization requires good regulation if sector performance is to be improved. Private participation runs across a spectrum of activities. The sale of a government’s ownership shares in businesses to private investors represents the most comprehensive form of privatization. Liberalization involves the opening up of markets to the forces of supply and demand; this requires a reduction of government intervention, including allowing greater freedom of entry. Both policies require the development of a strong regulatory agency to monitor developments, mediate disputes, and implement public policy.

19. Regulators must be predictable. Investors understand that if returns are excessive for the risks involved, the arrangements are not likely to be sustainable. At the same time, those risks are partly endogenous—they reflect decisions made by the commissions. A record of consistency is established when decisions are clearly based on evidence and one-sided decisions are avoided. Investors look at the record and make judgments regarding likely future decisions. Perceptions of risk determine the cost of capital.

20. Organizations must manage relations with the media carefully. Newspapers and television translate complex regulatory issues for the general public. Public opinion is one of the factors affecting the regulatory climate for new investment and for promoting strong sector performance. Therefore, press conferences, press releases, and interviews represent opportunities for communicating with citizens—with reporters as the “filters.” This fact places a special burden on commissions to be clear and concise (avoiding jargon).

21. “The task of the utility regulator is one which requires the wisdom of Solomon, the patience of Job, the determination of a bulldog, and the hide of a rhinoceros.” This quotation from a New York Public Service Commission Chairman (Lundy) underscores the challenges facing those responsible for industry oversight. Different groups have narrow interests that will be expressed vehemently in meetings and in the press. Furthermore, the issues that are raised will be complex. Patience and wisdom are qualities gained through experience—they cannot be taught.

22. Training is essential for staff development at utilities and at regulatory commissions. Even though wisdom comes through experience, expertise can be achieved through technical training. Workshops, international meetings, and regional task forces provide opportunities for continuing education.

23. There is great value in networking across countries, sectors, and roles. As noted earlier, no group has all the answers to the issues facing national regulators. After taking advantage of internal workshops, regulators can participate in organizations that promote the sharing of ideas, information, and experience.

24. There are links between theory and practice. Theory is sometimes viewed as highly abstract, so another term might be utilized: principles. Principles reflect the reality of infrastructure: production technologies, willingness to pay, public expectations, operating characteristics, political pressures, and international perceptions. Good practice applies the principles and lessons gained from networking, research and study.

25. Efficiency matters. When firms are producing services efficiently, resources are not being wasted. Allocative efficiency occurs when price is equal to incremental cost. Innovation efficiency is present when new production processes are adopted and new services are introduced over time. Society is getting the most benefit out of available resources when these dimensions of efficiency are achieved.

26. Fairness matters. The disadvantaged and powerless are the last ones to be served by infrastructure. When large groups in a society are left behind, they will find ways to express their
plight. Targeted subsidies represent one way to deliver on the promises of network expansion. Nevertheless, the problems of poverty cannot be solved through low utility prices.