



CEU SUMMER UNIVERSITY

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Energy Regulatory Practices

Co-sponsored by the United States Agency for International Development

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Resource Persons: **Andrzej Baniak, Florin Gugu**, Commissioner, Romanian Electricity and Heat Regulatory Authority
Dusan Holoubek, Commissioner, Regulatory Office for Network Industries of Slovakia
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Maria Manicuta, Commissioner, Romanian Electricity and Heat Regulatory Authority
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Lidia Zestrea, Head of Tariff Department, National Energy Regulatory Agency, Moldova

Abstract

Energy regulatory authorities have been set up in Central-Eastern Europe and in the Commonwealth of the Independent States over the past years as one of the fundamental elements of democracy and market economy. It is a new phenomenon in many countries and these institutions often struggle with lack of appropriate and transferable experience.

A training needs assessment prepared by the Energy Regulators Regional Association (ERRA) showed that economic and financial skills are central to the administrative and economic regulation of the public utilities. Professional development in energy regulation requires a working knowledge of regulatory economics, an understanding of policy impacts and the ability to navigate national policy processes, and effective agency management of the legal and organizational processes necessary for adequate "due-process" protection in regulatory activities. In addition, training programs must take into account local conditions and national values as well as the increasing movements toward regional markets and expanded trade in electricity, which are moving nations into more compatible, harmonized regulatory arrangements.

With this course, ERRA would like promote better regulatory practices in ERRA member countries as well as across the region as specific regional markets develop. ERRA members have created training materials to provide the technical, economic and legal skills that are needed to design and manage successful regulatory systems for the electric power industry. The course will focus on three major modules: Basic Economics of Regulation; Tariff and Pricing Issues; Licensing and Competition Issues in a level of depth that meets the professional needs of staff in regulatory commissions.

The design of the summer program is based on a peer-type of cooperation. Instructors of the course are practising energy regulators with significant and noteworthy regulatory experience and expertise. The course is designed to assure the transfer of practises and information from experienced regulators to new or young regulatory staff. At the same time, the course ensures that practises and lessons accumulated by energy regulators of the Central-Eastern European region are transferred to recently established organizations of other regions. The course is jointly supported by the Central European University and the United States Agency for International Development (USAID). Additional support was provided by the National Association of Regulatory Utility Commissioners of the United States.

Course curriculum

- **PART I: Introduction To The Economics Of Regulation And Role Of Regulator In The Liberalized Energy Sector (1 day)**
- **PART II: Licensing / Competition**
- **PART III: Tariffs And Pricing**

MONDAY

08:00 – 09:00 REGISTRATION

08:45 – 09:00 Welcoming Comments

Dr. Peter Kaderjak, Energy
Regulators Regional Association
Mrs. Eva Gedeon, Executive
Director, CEU Summer
University
Professor Andrzej Baniak,
Economics Department, CEU

09:00 – 10:40 **Introduction to Economics of Regulation**

Content:

1. What is regulation?
2. Regulation versus competition policy.
3. What are utilities (network industries).
Competitive structure of utilities.
4. Objective of the Regulator.
5. Regulation of Natural Monopoly.
 - What is natural monopoly?
 - Natural monopoly versus essential facility.
 - Regulation of single product monopoly: Marginal Cost Pricing versus Average Cost Pricing.
 - Regulation of multiproduct monopoly: Ramsey prices
6. Main concepts of the theory of oligopoly.
 - Quantity versus price competition.
 - Concentration in oligopolistic industry.
 - Collusion in oligopoly
7. Regulation under asymmetric information

10:40 – 11:00 *Coffee Break*

11:00 – 11:50 **The Role of Regulator**

Content:

- Scope of Regulation
- Models of Regulation, Different Regulatory Approaches
- Functions of a Regulatory Agency
- Case Studies

11:50 – 12:40 **Energy Sector Liberalization and Market Reform – Global Trends and Developments in the EU Countries**

Content:

- Recent global trends (liberalisation, privatisation, etc.)
- Developments in the EU countries (Electricity and Gas Directives, implementation of the directives, further market opening, Green electricity, CHP and other directives)
- New regulatory tools (incentive pricing, supervision of competition, quality of service regulation)
- Developments in the ERRA countries: case studies

12:40 – 14:00 *Lunch Break*

14:00 – 15:40 **Alternative Market Structures, Building Blocks of Restructured Markets**

Content:

- Major models of market structure reform
- Rationale and potential effects of ownership change
- Major characteristics of single buyer model, wholesale competition and retails competition
- Unbundling
- Regulated third party access (separate network pricing)
- Basic contractual agreements replacing coordination within a vertically integrated system
- Balancing markets
- Potential forms of wholesale markets (exchanges, OTC)
- Ownership issues
- Case study

15:50 – 16:40 **Open Discussions (new vs. traditional regulatory tools and problems – incentive pricing, quality regulation, market power, cross border trade)**

- Including the topics discussed in existing ERRA papers ##15, 18, 23, 20, 21 (partial), #19, #16 (partial)

- Documents:
 - Each attendee will bring their own distribution/supply license
 - Slides
 - General Presentation
 - Case Study
 - Questionnaire on distribution and supply issues
- The general presentation will discuss the background licensing regime and the appropriate content of a license, including what financial qualifications to demand, licensing period, what activities are licensed, enforcement and amendment terms
- The case study will discuss one country's mechanisms for reporting, measuring and enforcing
- Questionnaire / focused questions about which functions and license-conditions are covered in a distribution versus a supply license will be distributed for the attendees to complete during the lunchtime break

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10:40 – 11:00 Coffee Break

11:00 – 11:50 **Licensing Process and Content Con'td**

11:50 – 12:40 **Licensing, reporting, monitoring and enforcing**

Content:

- Including the topics discussed in existing ERRA papers ##22, 8, 12, 10, 3, 16 (partial), 21 (partial), and Report of Monitoring Working Group
- Documents:
 - General presentation slides
 - Case Study slides
- The general presentation will discuss monitoring practices, including reporting requirements, how to measure quality of service, and how to enforce licensing terms, and general dispute resolution issues
- The case study will discuss one country's mechanisms for reporting, measuring and enforcing

TUESDAY

09:00 – 10:40 **Licensing Process and Content**

Content:

- Including the topics discussed in existing ERRA papers ##15, 18, 23, 20, 21 (partial), #19, #16 (partial)
- Documents:
 - Each attendee will bring their own distribution/supply license
 - Slides
 - General Presentation
 - Case Study
 - Questionnaire on distribution and supply issues
- The general presentation will discuss the background licensing regime and the appropriate content of a license, including what financial qualifications to demand, licensing period, what activities are licensed, enforcement and amendment terms
- The case study will discuss one country's mechanisms for reporting, measuring and enforcing
- Questionnaire / focused questions about which functions and license-conditions are covered in a

12:40 – 14:00 Lunch Break

14:00 – 14:50 **Licensing, reporting, monitoring and enforcing Cont'd**

14:50 – 15:40 **Commentary on completed questionnaires** Ms. Maria Manicuta will return to discuss the completed questions, to reinforce points needing clarification or further discussion

15:40 – 16:00 Coffee Break

16:00 – 16:50 **Market Structure (overview)**

Content:

- Documents:
 - General presentation slides
 - Market structure form for attendees
- A general overview of basic market structures, explaining how markets work, followed by
- Distribution of a form for attendees to complete showing what market structure is used in their jurisdiction

WEDNESDAY

09:00 – 10:40 Market Structures and Models

Content:

- Including the topics discussed in existing ERRA papers ## 13, 2, 6, 14, 11, 5, 9 (partial), 1 (partial), and Structural Comparison of ERRA Member Electricity Markets (Discussion Paper in 2002/2003)
- Documents:
 - General presentation slides
 - Case Study slides
- The attendees will hand in their market structure forms
- The general presentation will discuss market structures and models, the commercial arrangements used, market rules, grid codes and regional markets
- The case study will show one country's choice of a model, why, and how it is embodied in the country's rules, codes and contracts. The choice will be a country that has changed to a competitive environment, and discuss the structures used before and after the change to competition
- Attendees will have an opportunity during the lunch break to review their market structure forms to make any desired changes after having heard the morning presentations.

10:40 – 11:00 *Coffee Break*

11:00 – 11:50 Market Structures and Models Cont'd

11:50 – 12:40 Competition measuring, monitoring and enforcement

Content:

- Including topics discussed in existing ERRA papers ##7, 9 (partial), 17
- Documents:
 - General presentation slides
 - Links to relevant topical sites, e.g., Worldbank materials on regulatory governance mechanisms
- The general presentation will discuss how a regulator measures competition, monitors to ensure competition, corrects abuse of market power, and resolves competition

questions through dispute resolution mechanisms

- Topics will include the role of the energy regulator versus the anti-monopoly regulator and cooperation between the two authorities
- What policies hinder competition and which promote competition?
- How do the regulators apply competition rules and antitrust policies?

12:40 – 14:00 *Lunch Break*

14:00 – 15:40 Competition measuring, monitoring and enforcement Cont'd

THURSDAY III. TARIFFS AND PRICING

09:00 – 10:40 Economics of open markets / Basics of price and cost

Content:

- Concept of Supply and Demand
- Cost Casualty
 - a. Opportunity Cost
- Marginal Cost
 - a. Short-Run
 - b. Long-Run
- Fixed Costs
- Stand alone costs
- Common and Overhead Costs
- The Role of Price in a Market
 - a. Send signal of the opportunity cost of consumption
 - b. Cause behavioral changes
- Price Elasticity
 - a. Inelastic
 - b. Elastic
 - c. Effects on total revenue
- Cross Subsidy
 - a. Prices less than Marginal Costs

10:40 – 11:00 *Coffee Break*

11:00 – 12:40 Unbundling network elements

Content:

- Goals of a Cost Service Study
 - a. Allocate Costs to Customers Responsible for the Costs
 - b. Rate Stability
 - c. Collect Necessary Revenue

- Network Elements
 - a. Generation
 - b. Transmission
 - c. Distribution
 - d. Common and Overhead Costs
- Classification of Costs
 - a. Voltage Levels
 - b. Time of use
 - Real time meters and service
 - c. Rural/Urban
 - d. Line Losses
- Exercise
 - a. Develop Transmission and Distribution Cost
- Case Study
- Free Discussion

12:40 – 14:00 *Lunch Break*

14:00 – 14:50 **Basic Elements of Tariffs**

Content:

- Basic Elements of Tariffs
- Terms and Conditions
- Recovery of Fixed costs
- Recovery of Variable costs
- Recognition of Voltage Differences
- Exercise

15:00 – 16:40 **Distribution Tariffs**

Content:

- Distribution Tariffs
- Mechanisms for National Uniform Tariffs
- Case Studies
- Exercises
- Free Discussion

FRIDAY III. TARIFFS AND PRICING

09:00 – 10:40 **Network Tariffs**

Content:

- Price Control Mechanism
- Transmission Tariffs
 - a. Contract Path
 - b. Postage Stamp
 - c. MW-Mile
 - d. Nodal-Zonal
- Ancillary Services
 - a. Reactive Power
 - b. Black Start
 - c. Regulation
 - d. Balancing
 - e. Load Following
- Cross Border Trades

10:40 – 11:00 *Coffee Break*

11:00 – 12:40 **End-User Tariffs**

Content:

- Definition of Eligible Customers and Captive Customers
- Captive End-User Tariff Classifications
- Voltage Differentiation
- Time Differentiation
- Load Factor Differentiation
- Residential Pricing
 - a. Low Income Consumer Pricing
- Subsidies
 - a. EU Recommendations for Governments of Transition Countries
- Case Studies
- Exercises
- Free Discussion

12:40 – 14:00 *Lunch Break*

14:00 – 14:50 **End-User Tariffs Con'td**

15:00 – 15:50 **Wrap-Up Session**

For more detailed biographies, updated course description, syllabus, reading lists please check

<http://www.ceu.hu/sun/index.html>

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