Russian Electricity Reform: An IEA Perspective

International Association of Energy Economists

July 2004

Isabel Murray
Russia Desk Officer
Office of Non-Member Countries
International Energy Agency
OECD REGULATORY REFORM REVIEW

- Russia - 1st Non-OECD country to be reviewed
- Government regulatory capacity as well as 3 key sectors:
  - Rail
  - Telecoms
  - Electricity
- IEA has taken the lead on Electricity
- Timeframe – Publication
  - IEA: late-2004
  - OECD: early-2005
Proposed Reforms
Goals & Objectives

• Improving efficiency and transparency
• Promoting efficient investment
• Ensuring reliable electricity supplies

• The Russian Government has recognised that the achievement of these goals would be:

“…impossible without changing the existing system of economic relations and immediate structural reform of the electric power industry…”
Proposed Reforms
Market Structure

• **Vertical unbundling of RAO UES and regional energos**
  – Generation
  – Transmission
  – Distribution
  – Retailing businesses

• **Horizontal unbundling**
  – Generation
  – Retail

• **Separation of network ownership and system operation**

• **Wholesale market administrator (ATS)**
Proposed Reforms

Target Market Structure

Wholesale
- Thermal
  - 8-10 GW
- Hydro
  - 8-10 GW
- Genco 1
- Genco 2
- Genco 3
- Genco 4
- Genco 5
- Genco 6
- Genco 7
- Genco 8
- Genco 9
- Genco 10
- 14 Territorial Gencos

Market Operator (ATS)

Network
- System Operator
- Inter-regional Distribution Companies

Retail
- Guaranteeing Suppliers
- Retail cos
- Retail cos
- Retail cos

Retail cos
Proposed Reforms

Target Market Structure

Wholesale

- Genco 1
- Genco 2
- Genco 3
- Genco 4
- Genco 5
- Genco 6

- Thermal 8-10 GW
- Hydro 8-10 GW
- 14 Territorial Gencos

Network

- Market Operator (ATS)
- Nuclear Genco
- Inter-regional Distribution Companies

Retail

- System Operator
- Guaranteeing Suppliers
- Retail cos
Proposed Reforms
Market Design

• Legislative basis / foundation

• Key components of the Wholesale Market:
  – Bilateral Contract market
  – Day-ahead Spot Market
  – Intra-day Balancing Market

• Nodal Pricing
  – Locational Marginal Pricing - 5500 nodes
  – Importance of Financial Transmission Rights (FTRs)
Proposed Reforms
Regulatory Framework

• Comprehensive and integrated regulatory framework has been proposed (Government Decision 865-r, 06/03):
  • Regulation of entry (and exit in some cases) to wholesale and retail markets
  • Regulation of market structure, market operation and conduct
  • Regulation of prices and access to network services and to other regulated services
  • Regulation of new investment
  • Regulation to protect consumer interests.
Proposed Reforms
Implementation Strategy

Stage 1
- Restructuring of UES
- Creation of FGC / SO / ATS
- Unbundling of AO Energos

Stage 2
- Creation of new entities
- Wholesale Genco Auctions???

Stage 3
- Attraction of large-scale investments

Timeline:
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009-2010
Proposed Reforms
Implementation Strategy

**Stage 1**
- Establishment of the 5-15 Market
- Testing of transition market
- Development & Intro of Financial Mechanisms
- Establishment of the 5-15 Market

**Stage 2**
- Laws for the market’s functioning
- Unbundling of AO Energos
- Creation of new entities
- Wholesale Genco Auctions???

**Stage 3**
- Attraction of large-scale investments
- Opening of the competitive market
- Laws for the market’s functioning
- Establishment of the 5-15 Market
- Development & Intro of Financial Mechanisms
- Elimination of cross subsidies

**Timeline**
- July 2001
- June 2004
- 2006-2007
- 2009-2010

**Steps**
- 2001: Establishment of the 5-15 Market
- 2002: Testing of transition market
- 2003: Development & Intro of Financial Mechanisms
- 2004: Establishment of the 5-15 Market
- 2006: Attraction of large-scale investments
- 2007: Opening of the competitive market
5-15 Market: Volume & Price Dynamics

Market Design

Source: NP ATS
Elaboration of basic laws

Proposed Reforms
Implementation Strategy

Stage 1
- Creation of FGC / SO / ATS
- Unbundling of AO Energos
- Establishment of the 5-15 Market

Stage 2
- Testing of transition market
- Unbundling of AO Energos
- Creation of new entities
- Laws for the market’s functioning
- Establishment of the 5-15 Market
- Wholesale Genco Auctions???

Stage 3
- Attraction of large-scale investments
- Opening of the competitive market
- Development & Intro of Financial Mechanisms
- Elimination of cross subsidies

865-r Timetable
- Appeals
- Information Disclosure
- Non-Discriminatory Access
- Anti-Monopoly
- Pricing
- Investment Policy
Issues
Market Structure

- Market Structure
  - Competitive Nationally
  - Concerns regionally
  - Inter-regional connections - network

- Stage 1
  - Unbundling of AO Energos
  - Restructuring of UES
  - Creation of FGC / SO / ATS

- Stage 2
  - Creation of new entities
  - Wholesale Genco Auctions

- Stage 3
  - Attraction of large-scale investments

Timeline:
- July 2001
- June 2004
- 2006-2007
- 2009-2010
Russian Electricity Capacity

Total Capacity 205 GW

- Far East: 11 GW
- Siberia: 48 GW
- Urals: 21 GW
- Volga: 37 GW
- Northwest: 21 GW
- Center: 41 GW
- South: 15 GW

Total Electricity Capacity: 205 GW
Russian Electricity Generation & Transmission Capacity

Northwest 21 GW
- 1300 MW
- 2500 MW
- 2500 MW
- 250 MW
- 100 MW

Center 41 GW
- 1300 MW
- 1250 MW
- 250 MW
- 100 MW
- 100 MW

South 15 GW
- 420 MW
- 250 MW

Volga 37 GW
- 100 MW
- 230 MW

Urals 21 GW
- 240 MW

Siberia 48 GW
- 80 MW
- 320 MW

Far East 11 GW
- 30 MW

Finland / Norway 1300 MW

Belarus 1160 MW

Ukraine 420 MW

Georgia

Kazakhstan

Mongolia

China
Issues
Market Structure

- Diversity of Ownership
  - Most likely Russian Investors
  - Will they be committed to making electricity a core business?
Issues
Market Design

- Establishment of the 5-15 Market
- Testing of transition market
- Development & intro of Financial Mechanisms
- Laws for the market’s functioning
- Elimination of cross subsidies
- Opening of the competitive market

• Investment Signals
  • Capacity Mechanisms
  • Financial Markets
  • Price Caps
Issues
Regulatory Framework

- Tariff Rebalancing
  - Need to get rid of cross-subsidies
- Competitive Neutrality Issues
  - Owner / Regulator / Participant
- Ensure enough resources to Antimonopoly Service
Institutional Framework

• Government Restructuring
• Effective Co-ordination between Policy, Regulatory and Institutional Bodies
  – Market Operator and System Operator
  – Federal Tariff Service and regional bodies
  – Different government agencies

• Institutional Arrangements
  – Independence and integrity
  – Regulatory decisions should be – and be perceived to be:
    • Robust
    • Objective
    • Consistent
    • Transparent
  – Federal Tariff Service – responsibility for setting regulated tariffs
  – Federal Antimonopoly Service – responsibility for access and competition
Russian Electricity Sector Reform
Some Observations

• Ambitious implementation timeframe
• Impressive progress to date
• Substantial challenges ahead
SPACIBA!

Questions / Comments

isabel.murray@iea.org