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The Russian electricity supply industry: from reform to reform?

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Nadia Chernenko

In this paper we summarise the history of the Russian electricity supply industry (ESI), starting from the early 1990s and up to the recent reform in 2003-11. The Russian ESI is one of the few industries that have been largely neglected in the research literature, and to our knowledge, this is a first integral historical overview of the industry. We discuss the recent reform, its causes and outcome, by looking the industry background from the early 1990s and tracing the roots of the problems that the recent reform attempted to solve. Our main conclusion is that the reform of a large system is feasible, yet the reform design and implementation needs extra care as any mistake is grossly amplified and may be very difficult to correct.

We start our paper by summary of international experience in ESI reforms, combined with a brief summary of the recent Russian reform. We then look at the history of the Russian ESI starting from the early 1990s, with two goals in mind. First, we provide a summary and analysis of the early events (which barely exists in the literature) and second, more importantly, we outline the problems and issues that the recent reform had to deal with. The problems were numerous: poor energy efficiency of the whole economy and high reserve margin in the industry; complex monopolistic structure of the industry that emerged by mid-90s and inefficient dispatch rules; extremely low regulated prices and the persistent non-payment of the bills. Combined together, these problems resulted in poor financial performance of the industry and under-financing of investment.

We then turn to the main reform of 2003-11. We briefly discuss the preparation stage: different reform proposals and the key legislation. We then discuss various aspects of the reform: new industry structure and concentration, market design and liberalisation, issues on the retail and fuel markets, and the design of capacity markets.

We observe that the industry structure as conceived at the start of the reform is well designed but not fully implemented. In order to avoid concentration of assets in any small area and potential abuse of market power, the new wholesale generation companies have power plants dispersed across the country and are relatively equal in size and efficiency. However, further mergers and acquisitions led by InterRAO and Gazprom, state-owned companies, increased concentration in the industry and made the government the principal stake-owner on the wholesale market. One of key goal – attracting private investment to the industry – thus seems half-achieved.

Trading on the new wholesale market NOREM was liberalised, and starting from January 2011 the market participants can negotiate free bilateral contracts and/or submit free bids on the exchange. The market participants, however, are subject to bidding code of practice (bidding at variable cost) to suppress potential problems of market power observed in other electricity markets. Retail and fuel markets are partially de-regulated, and as such seem to adversely affect the overall market efficiency.

Finally, we examine the capacity market and conclude that it is heavily regulated. The capacity can be sold under capacity delivery agreement (DPM scheme), free bilateral contracts or on the auction. As the RAO EES monopoly had a large investment programme that was passed onto the new generation companies, the DPM scheme was introduced to guarantee returns to new investors. The scheme greatly favours state-owned power plants and in general appears to be inefficient (not the last reason being the large scale of the programme). The auctions theoretically have free bidding but are subject to price caps which affect 60% of the capacity sold at the auctions. Future development and construction of capacity is also subject to stringent regulation so that private investors have very limited room for manoeuvre and choice of location and technology.

Wwe conclude that the Russian electricity market reform was large by scale and was eventually implemented despite strong opposition from various technical and expert groups. However, the government still plays a key role in the industry, both as the major plant owner and as a forceful regulator. Much work needs to be done on the retail, fuel and capacity markets in order to promote competition and allow market players freely make their choice of counterparty, volume and prices.

Contact nc346@cam.ac.uk
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