



## **Black Sea Regional Transmission Planning Project Meeting**

### **Meeting Minutes/Report July 6, 2009**

Ukrenergo, the national Ukraine transmission system operator, hosted a meeting of the Black Sea Regional Transmission Project (BSTP) Working Group on July 6, 2009 in Kiev. Participating transmission system operators (TSO) and other organizations included: System Operator of Armenia; Energy Institute of Armenia; Electricity System Operator of Bulgaria (ESO-EAD); Georgia State Electrosystem; Moldelectrica; Transelectrica; TEIAS; Ukrenergo; USAID and USEA. The Russian transmission system operator did not participate. The meeting was held in conjunction with a training workshop on the financial and economic analysis of electric power transmission projects, conducted on July 7-8, 2009.

The objectives of the meeting were to:

- Exchange information on recent TSO developments in the region;
- Review and update the existing steady state network for 2015 and the draft summer peak network model for 2020;
- Review the status of the 2010 dynamic model;
- Identify and assign scenarios for analysis;
- Discuss the agenda for the proposed joint BSTP & SECI investor workshop timed to highlight potential investment opportunities identified in the current phase of each project.

### **TSO Updates**

Following welcoming remarks and a review of the agenda, representatives from each of the participating TSOs provided an update on current and planned projects, including the status of new transmission lines and generation stations.

#### **Armenia**

The officially scheduled term of operation for the current Medzamor nuclear reactor is planned through 2016, therefore the current reactor is included in the calculated (design analytical) model for Armenia through 2015. Construction works for the new nuclear power plant will be finished by 2020 and for this reason it is included in the 2020 model.

Since the last BSTP meeting, there is no information about development work on the reconstruction of the Armenia-Turkey 220 kV line. But the Armenia - Turkey 400 kV line is included in the 2020 plan because construction works are planned to be completed by 2017.

### **Bulgaria**

NEK reported that construction of the new nuclear power plant will require significant changes to its 440 kV system. There are 2000 MW of wind power applications. NEK will connect 150 MW this year. Bulgaria is using the feed-in tariff, which is providing strong incentives for wind power.

CEZ is considering rehabilitation of its 6 x 220 MW units at the Varna power plant. These are Russian generators, approximately 40 years old. CEZ has decided to refurbish three units with new gas fired generation, one of which is going to be combined cycle. The gas units will have 300 MW each, with the combined cycle adding additional capacity. NEK conducted dynamic studies on the system and it was determined that a new transformer at 220/110 kV is required to support the CEZ upgrade.

### **Georgia**

Fichtner is currently conducting the design study for the new internal 500 kV lines in Georgia and the back to back station with Turkey. The study is expected to be completed by September 2009. Following the design study the construction process will begin. The loan for the construction phase will be approximately 220 million Euro funded by EBRD and KFW. Turkey confirmed the same from its side and said the line is scheduled to be operational in 2012. Further, GSE and TEIAS have begun discussions on a new interconnection line from Batumi to Turkey that is planned for operation in 2020.

### **Moldova**

Moldelectrica reported that its principle efforts are aimed at upgrading its system to meet ENTSO-E standards at the Moldova GRES; Beltz substation; and construction of a new SCADA system.

### **Romania**

Transelectrica reported that it is making progress on the submarine cable to Turkey. Vatenfall was selected to conduct the design study for this line, which is being financed by Transelectrica, Nuclearelectrica and the Government of Sweden

### **Turkey**

TEIAS reported that each June for the past several years it has had to shed load due to inadequate capacity and transmission congestion. This year it has not had to do so. It is projecting over a 10 percent drop in peak demand for the summer.

### **Ukraine**

Ukrenergo reported that in June, new standards were promulgated to meet ENTSO-E requirements for the former UCTE. Only 5% of thermal stations meet the standards, Ukrenergo estimates. This represents a formidable challenge for synchronous interconnection to UCTE.

### **Update on ENTSO-E**

Dan Preotescu provided a presentation on the structure of the new ENTSO-E, which began operation on July 1. The three committees comprising ENTSO-E are the

Operational, Development and Market Committees. There is a working group on legal issues that may become a committee in the future.

The operational committee will be organized based on operational blocks. The UK will be a subcommittee, as will NordPool. The former UCTE will be the Continental Europe Regional subcommittee. The Development committee has a different organization structure. There is a Western Europe regional Forum, Central Europe Regional Forum, and a Southeastern Europe Regional Forum, as well as others. The structure of the market committee has not been decided.

Interconnection projects such as Turkey, N. Africa, Albania, and Ukraine and Moldova, for the moment are reporting to the Operational Committee. Ukraine and Moldova have specifically requested to become a member of ENTSO-E. The study to examine the potential and requirements for synchronous operation has begun.

### **Discussion of the 2015 and 2020 Steady State Model**

EKC reviewed progress toward the 2015 and 2020 models. All of the SEE members of the working group (including Turkey) have provided updates to the 2015 and 2020 models. Georgia has provided its 2020 model, but not the 2015 model. Ukraine and Moldova have not provided updates for either model. It was decided at the meeting that for 2015, only those network elements in the design phase or beyond will be included in the 2015 model. This will make it as realistic as possible. The 2020 model will include elements contained in the 2015 model, as well as a list of elements that would be considered as a "wish list" due to the lengthy planning horizon 2020 affords. TSOs were given until the end of July to submit their model updates.

### **Update on the 2010 Dynamic Model**

EKC reported that the 2010 dynamic model is complete. To put its perspective in size, Dan Preotescu estimated that the entire SECI model can fit within the portion of the BSTP dynamic model occupied by Russia. He congratulated the working group on completing the first draft of the dynamic model. Over the remainder of July, the TSOs committed to conducting verification tests of their national dynamic models using real time recorded data of actual network incidents including loss of a major generator, load and short circuit occurrence.

### **Identification of Scenarios for Analysis**

The Working Group developed the list of trade/exchange scenarios to be analyzed in time for the November investor's workshop. Each TSO volunteered to take responsibility for one set of scenarios, as follows:

- Transelectrica will analyze the maximum capacity for transiting Ukrainian exports through Romania to the unified Romania, Austria, Hungary electricity market

- Moldova will analyze the maximum imports from Ukraine and a second scenario will analyze Moldova's transit capacity for transfers from Ukraine to Romania in 2015 and 2020
- Turkey will analyze the maximum capacity for exports to Romania on the undersea cable
- Bulgaria will analyze transit capacity for Turkish exports to UCTE in the 2015 and 2020 timeframes
- Georgia will analyze the maximum transfer capacity of its system for export to Turkey in light of the 500 kV upgrades and new back-to-back station, taking into account potential Azeri exports using Georgia for transit
- Ukraine, which will soon commence a study on synchronous operation with the former UCTE, will analyze the potential to exchange power with a new back-to-back or DC link in the 2015 timeframe and in parallel operation in the 2020 timeframe.
- USEA will contact Russia by phone and email to determine its preferred scenario.
- Armenia will assess synchronous interconnections with Georgia

### **Investor Workshop**

William Polen of USEA discussed the investor workshop, now scheduled to be conducted from November 11-13, 2009 in Istanbul. He discussed the following types of participants expected to attend the workshop.

- Transmission System Operators
- Project Developers
- Traders
- International Financial Institutions
- Policy Officials
- Regulators

BSTP participants will present the results of the analysis of their scenarios. In addition, each country should prepared short (7-10 minutes) presentation with this outline proposal:

- Supply/Demand Balance (up to 2020)
- New Energy Sources
- Priority Transmission Projects
- Overall Sector Investment Requirements
- Key Market & Regulatory Issues
  - Market Design, Market Rules & Grid Codes
  - Integration with Neighboring Countries
  - Other Country Specific Issues: Interconnection with Neighboring Countries; Renewable Energy Integration; Generation Interconnection Costs

Participants were requested to identify regulatory, commercial and technical issues associated with greater integration of the BSTP and SECI regions that could be discussed in panel sessions of regulators, developers, and financiers.

### **Project Deadlines**

The following project deadlines were established:

All TSOs must provide updates to the 2015 and 2020 steady state models by the end of July

The results of the analysis of the agreed upon scenarios are to be provided by September 15, 2009.

### **Next Meeting**

The next meeting will be conducted at the end of September in Romania at a venue to be determined.