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Hydropower Investment Promotion Project (HIPP)

HIPP MISSION REPORT TURKEY, ANKARA 14-16 NOVEMBER, 2011

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TURKEY, ANKARA
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USAID HYDROPOWER INVESTMENT PROMOTION PROJECT
(HIPP)

CONTRACT NUMBER: EEM-I-00-07-00005-0

DELOITTE CONSULTING LLP

IN COLLABORATION WITH BLACK & VEATCH AND PIERCE
ATWOOD ATTORNEYS LLC.

USAID/CAUCASUS OFFICE OF ENERGY AND ENVIRONMENT
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During HIPP mission in Turkey, Ankara, Deloitte Turkey arranged for a number of meetings.

Company: Nurol Energy

Date/Time: 14th November 2011 / 9.30

Place: Nurol office

Attendees: Mustafa Tuygun (Business Development Manager) –

mustafa.tuygun@nurol.com.tr

Taylan G. Önerci (Project engineer) – taylan.onerci@nurol.com.tr

Notes:

- Risk of investing in Georgia was the main topic of discussion. The company emphasized on transmission line and export/import restrictions. They do not want to take transmission line interruption risk. If they invested in Georgia, they would want to sell whenever they want without any transmission interruption or bottleneck risk on the interconnection line.
- The company emphasized on having a transparent and fair mechanism for trade between Georgia and Turkey.
- NUROL has investments in Georgia but mentioned that the 450 MW Namakhvani HPP Cascade will be cancelled (not yet officially declared). There is not enough security for the project, there is no government guarantee, either no PPA's. These conditions are not enough to continue with their investment. Additionally, there is no guarantee that they can transfer what they produce across the transmission line.
- NUROL estimates that the Namakhvani HPP project would have cost \$US 1.3 Billion.
- It is not acceptable for the Government of Georgia to state that they cannot control what Turkey can offer for firm transmission rights, as the GoG is in the best position to negotiate the firm rights for the Georgian HPPs.
- They are optimistic about the back-to back mechanism, and agree that this mechanism will work for trade if there are investments.
- No creditworthy entity is offered for energy sales in Georgia.
- NUROL recommends a consolidator in Georgia to purchase all new HPP energy for resell to Turkey.
- The GEDF and PPP Fund are gimmicks.

Company: KEP International, International Power Corporation

Date/Time: 14th November 2011 / 11.30

Place: Deloitte office

Attendees: Halim Neyzi – hneyzi@kep.com.tr

Philip Metalf, IPC

Notes:

- The company (KEP) is a consulting firm in energy sector. They provide feasibility studies, installation and equipment supply services for power plants.

- The company emphasized financing problem of the projects in Georgia, and they are curious about how to guarantee energy off-take.
- They wonder about the trading mechanism from Georgia to Turkey, if Turkey will have trade zones in the future.
- KEP feels that the 3 month winter time sales to Georgian market requirement would be a liability for the company.
- KEP was very interested in the combination of a copper mine development and HPP development.
- They seemed interested in the map and HIPP. They told that they will examine the map and the sites; then they will present their opinion to HIPP.

Company: TEIAS (PMUM – Market Operator)

Date/Time: 14th November 2011 / 14.00

Place: TEIAS office

Attendees: Abdulkadir Ongun – abdulkadir.ongun@teias.gov.tr
 Abdullah Gözel – abdullah.gozel@teias.gov.tr
 Metin Aydın – metin.aydin@teias.gov.tr

Notes:

- Detailed information regarding Turkish power market was provided and the role of TEIAS in the power market was discussed. PMUM is a department within TEIAS.
- PMUM is the balancing market operator and will be the power exchange operator as of December 1, 2011.
- The Electricity and Gas Law is under revisions, revisions should be adopted by Parliament in the coming months, and PMUM may be organized as an independent entity outside of TEIAS.
- The trade between Turkey with Europe (Greece and Bulgaria interconnection) is done through market splitting (transmission rights and power sales are independently traded) which caused some difficulties with mismatches.
- PMUM was unaware of the new line to Borchka and the trading agreement between Georgia and Turkey. (Another department of TEIAS is in charge of these issues.)
- TEIAS is positive about market coupling between Turkey and Georgia; by this way trade between these countries can be established easily.
- A financial market operator (VOB) is located in Izmir that provides the financial derivatives market for the power sector.
- Clearing in the new DAM will be done through a clearing house, Takasbank (a partially State-owned agency). Takasbank will be responsible for payments of the market operations, while PMUM will be responsible for settlements.

Company: Çalık Energy

Date/Time: 15th November 2011 / 09.30

Place: Çalık office

Attendees: Hikmet Gökoğlu – hikmet.gokoğlu@calikenerji.com

Emre Çınar – emre.cinar@calikenerji.com

Notes:

- The company tried to make investments in Georgia three years ago, however, HPP studies on the MENR site were not detailed enough for Calik to decide to make any investments.
- They were interested in HIPP and asked for the details, procedures and steps to be followed. HIPP provided the website location of the project.
- Calik stated that they have several renewable energy projects under development in Turkey which is keeping them busy. The Board of Calik will decide by the end of November if it will start investigations into investments in Georgian HPPs. They will visit Georgia very soon if the response is positive from their Board.
- Calik Energy has banded together with 14 other wind power developers to build a transmission substation to remove transmission congestion.

Company: TETAS

Date/Time: 15th November 2011 / 11.30

Place: TETAS office

Attendees: Mehmet Ayerden – mehmet.ayerden@tetas.gov.tr

Notes:

- Transition period contracts regarding sales to distribution companies end in 2013, however, purchase guarantee of TETAS from gas-fired combined cycle plants continues until 2019. These high-priced take or pay agreements will cause TETAS to be in trouble in the competitive power market.
- The gas market opening will hurt TETAS as other generators (competitors) will be able to purchase competitively priced gas while the gas-fired generators that provide take or pay energy to TETAS purchase gas under long-term fixed price gas contracts that are quite old and expensive. In addition, the generators they purchase from are 45% efficient while new generators coming online in Turkey are 55% efficient.
- In order to position TETAS in the market as a free trader, some legislative arrangements are needed and restructuring of the organization is required.
- Purchasing cheaper electricity from Georgian HPPs may help TETAS in their energy mix, so that they could blend their portfolio to reduce their average cost.
- However, there are some limitations on their export and imports, and these should be rearranged if such purchases will be done.
- TETAS will expectedly have 27% market share in 2014.
- TETAS has agreed to purchase energy from the proposed nuclear power plant.

Company: EMRA

Date/Time: 15th November 2011 / 14.00

Place: EMRA office

Attendees: Oytun Alıcı – oaalici@epdk.org.tr

Notes:

- Detailed information regarding the legislations and legislative arrangements for Turkish power market were obtained.
- Detailed information regarding tariff calculation methodology was obtained. Data for tariff transmission calculations are specified in EMRA regulations.
- The transmission tariffs are separated by transmission zones. A re-calculation of the transmission tariffs is underway by TEIAS. (This re-calculation is actually not changing the methodology but re-evaluating the cost-items in calculations)
- Many rules and procedures have been adopted in accordance with EU legislation.
- EMRA does not have monitoring, reporting and sanctioning rules relating to licensees and the power market, though as privatization of the sector continues, they feel such rules will be necessary. A Competition Board is responsible for responding to complaints on market abuse including such abuse in the power market and can impose monetary penalties.
- There are no rules relating to the recording and reporting of service quality and reliability criteria for the transmission network.
- There is a single price on the DAM for each hour, but there is a possibility of temporary measures of having more than one price if congestion occurs. The single price will resume once the transmission congestion is removed. TEIAS intends to provide free flowing lines and to remove all congestion. In case of long standing and continuous congestion, this congestion management is considered to be achieved by trade zones. However, trade zones are not expected to be implemented in the first year of DAM.

Company: TEIAS Load Dispatch Department (System Operator)

Date/Time: 15th November 2011 / 16.00

Place: TEIAS office

Attendees: Hüseyin Yaylacioğlu – huseyin.yaylacioglu@teias.gov.tr

Notes:

- The Turkish transmission network is separated into 9 regions (regional load dispatch centers) and 22 groups. The 22 groups are planned to be consolidated within the 9 regions.
- Each of the regional transmission entities (regional load dispatch center) is subordinate to the national dispatch center.
- Separation of the national dispatch into a TSO is not envisioned for the near future. The possibility of privatizing the transmission company, perhaps by region, may be considered in the future.
- No reliability measures of the transmission network are available to the public.
- Mr. Yaylacioglu provided HIPP with a newly printed Turkish transmission map.

- There are no penalties for TEIAS if a power sales contract must be interrupted. Only the transmission fee will be waived during an interruption of the sales contract.

Company: Ministry of Energy and Natural Resources

Date/Time: 16th November 2011 / 10.00

Place: MENR Office

Attendees: Hasan Selek, Manager, International Relations

Notes:

- Energy policy and strategy of Turkey is based by EU directives. For this purpose, Electricity Energy Market and Supply Security Strategy Paper and MENR Strategic Plan for 2010-2014 were published. These documents are available on the Ministry's website.
- Regarding the interconnection issues, TEIAS is responsible for agreements, but when there is an unresolved dispute, the Ministry is in charge of solving the dispute. There are no written dispute resolution procedures for international interconnections.
- The Turkish electricity market should be fully opened by 2013.
- The Turkish gas market is opening slowly, now that large consumers can negotiate for gas from GASPROM, rather than purchased gas from BOTAS.

Company: TEIAS Transmission Planning and Coordination Division

Date/Time: 16th November 2011 / 11.30

Place: TEIAS Office

Attendees: Nurhan Ozan – nurhan.ozan@teias.gov.tr

Ercüment Özdemirci – ercument.ozdemirci@teias.gov.tr

Gül Okan – gul.okan@teias.gov.tr

Notes:

- In an internal report written by Tubitak, TEIAS is targeted to increase energy imports from Georgia to 700 MW by 2017 during annual high water periods and 1400MW in other times.
- Existing lines are not capable to support large volumes of energy from Georgia. Extra investment is needed within Turkey to increase transfer capability from the eastern to western parts of the country.
- Two new lines from Borchka would help – one to Keban and the other to Ankara, but no detailed transmission studies have been conducted yet. (Note that the line to Keban is on the new transmission map).
- Fault index for 400kV lines on the average is 8.3 times annually out of service times for every 100 km.
- There were excessive outages on the two 400 kV circuits from Borchka. A tower was replaced recently on the Black Sea coast circuit which should greatly

reduce the outages while the line to the southwest will be improved with the addition of reinforcement of the transmission lines near Lake Van.

- Generator shedding must be put in place in Georgia so that if the transmission line to Turkey is interrupted, then Georgian generators must shed the exact amount of energy traded on the line in a fraction of a second and the domestic electricity market and exports to other countries from Georgia remain without interruption.

Company: Limak Yatırım

Date/Time: 16th November 2011 / 14.00

Place: Limak office

Attendees: Serhat Dinç – sdinc@limakyatirim.com

Notes:

- Limak has signed with Kolin Construction a MoU with the GoG for development of the 110 MW Tsageri HPP. As far as Limak is concerned, this is public information.
- Limak and Kolin have also been shortlisted for the 170 MW Nenskra HPP tender.
- LIMAK is only interested in investments that are more than 100 MW, preferably each plant should be greater than 100 MW. Anything less is of no interest to Limak due to the requirements of RE 2008.
- Limak has asked GSE for projected losses on the EnergoTrans line. GSE has told Limak that the metering for the power contract to Turkey will be done at the border. Limak stated that they requested but have not received information on the loss calculation.
- Limak has also requested flexibility from GSE with respect to the Annual Energy Balance registration of capacity because it cannot predict a year in advance what volume of power will be available from run of river plants.
- Limak plans to sell power to its Turkish wholesale energy company from the Tsageri HPP.

Company: TEİAS Europe Transmission Coordination Division

Date/Time: 16th November 2011 / 16.00

Place: TEİAS office

Attendees: Algi Özkaya – algi.ozkaya@teias.gov.tr

Notes:

- Bulgaria and Greece interconnection line permits 300 MW of export and 400 MW of import; 35% of which is assigned to Greece and 65% of which is assigned to Bulgaria.
- Monthly auctions are conducted for trade between Greece and Bulgaria. Auctions are held in € (Euro), but payments are done in TL (Turkish Lira).

- A custom made platform (made by Tubitak) is used in trade auctions. The name of the platform is TCAT. Some relevant information can be found in tcat.teias.gov.tr
- Turkey is in trial phase with ENTSO-E connection; when this trial period is over and Turkey is connected, yearly auction will be able to be conducted. (Target is in autumn 2012).

USAID Hydropower Investment Promotion Project (USAID-HIPP)

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