

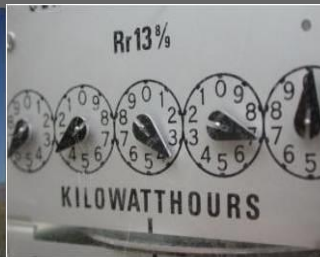


USAID
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**Hydropower Investment
Promotion Project (HIPP)**

TURKEY IMPORT AND EXPORT RULES AND EXPECTATIONS

PROJECT REPORT 2



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USAID HYDROPOWER INVESTMENT PROMOTION PROJECT
(HIPP)

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DELOITTE CONSULTING LLP

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2.0 LIST OF ACCRONYMS

Acronym	Definition
EMRA	Energy Markets Regulatory Authority
ENTSO-E	European Network Transmission System Operators-Electricity
HEPP	Hydro Electrical Power Plant
MMS	Market Management System
MFSC	Market Financial Settlement Center
NLDC	National Load Dispatch Center
SEE	South East Europe
TCAT	Auction Platform of TEIAS
TEIAS	Turkish Electricity Transmission Company
TETAS	Turkish Electricity Wholesale Company
YEKDEM	Renewable Energy Resources Support Mechanism

3.0 INTRODUCTION

This report is the second in a series of reports and presentations developed by DTT Turkey under a subcontract with USAID's Hydropower Investment Promotion Project. The purpose of this sub-contract is to explore and provide recommendations for enhancing the proposed electricity trading mechanism for competitive electricity trading between Georgia and Turkey.

Currently, the Turkish electricity market is composed of bilateral contracts and a balancing mechanism; allowing market participants to trade and balance their portfolios both in the long term and short term. In the first report under this sub-contract, the market structure and principles underlying the Turkish electricity market were defined in detail, including discussing future expectations for the market, and their effects on trade between Turkey and Georgia.

In Turkey, market participants are able to trade in the long run via bilateral contracts and derivative contracts, while balancing their portfolio in the day ahead spot market. Real time balancing follows these commercial activities, ensuring the security of the system.

In the first report, these markets and their operations were defined in detail, together with the roles of the relevant parties and schedule of all operations. Additionally, expected developments in Turkey over a few years were discussed in detail, considering all changes in market mechanisms, in roles and responsibilities of the relevant entities, and in schedules. After the overall Turkish market mechanism was clarified, how Georgian entities might fit into these mechanisms, how Georgian generators can access PMUM (Turkish Market Operator), how they would be affected by the anticipated changes, how cross border trade between the two countries might be enhanced were discussed in detail; together with recommended capacity allocation and trading mechanisms. Alternative trading mechanisms including market coupling opportunities are briefly discussed in the first report and these discussions will be elaborated in the upcoming reports/presentations.

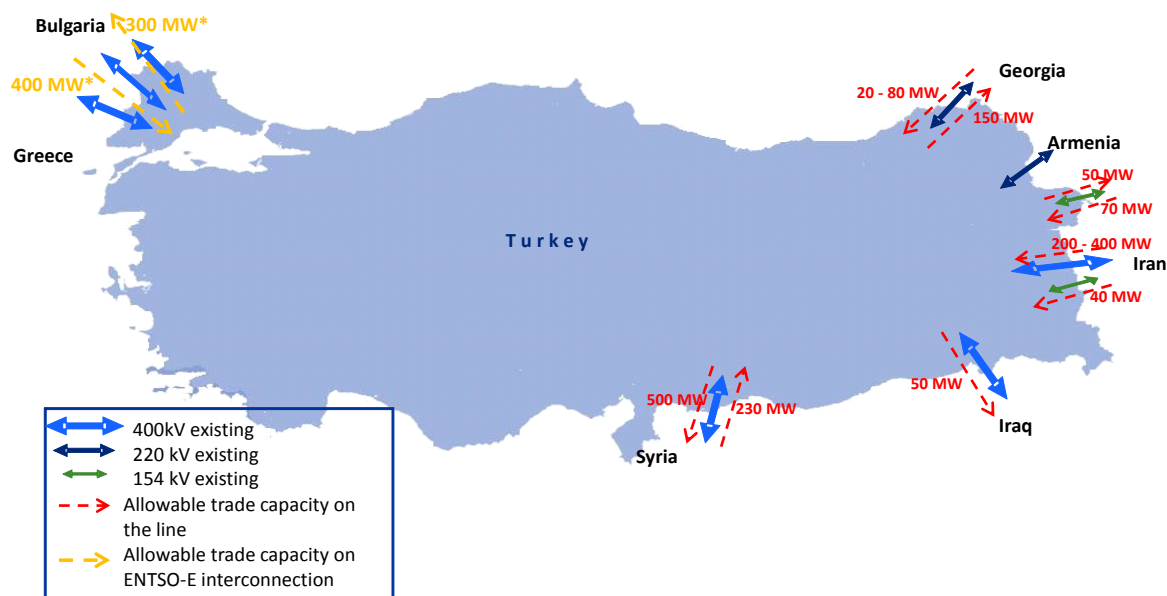
In this second report, as a next step and for the future design, existing import and export rules are evaluated in detail as well as licensing procedures regarding import and export. Additionally expectations regarding these procedures and the effect of these changes on Georgian hydro plants and power traders are discussed.

4.0 IMPORT AND EXPORT RULES

Existing import and export rules and implementation

Currently Turkey has electricity interconnections with Greece, Bulgaria, Georgia, Armenia, Iran, Iraq and Syria, however, so far, import and export figures are almost negligible compared to the overall electricity demand of Turkey, though ENTSO-E synchronization will increase the amount of electricity traded. Amongst the companies that perform import and export activities, TETAS is conducting the largest cross border electricity trading.

The map below illustrates the existing interconnection lines and maximum allowable trade capacities of these lines. Additionally, details regarding seasonal capacities for 2012 based on different trade methods can be seen in the following Table 1.



* Figures are the maximum trade limits for the whole ENTSO-E interconnection. 300 MW of export from Turkey to Europe and 400 MW of import from Europe to Turkey are determined as maximum values by ENTSO-E for the trial period of Turkey. Currently, net transfer capacity in these lines are announced monthly within these limits.

Figure 1- Existing Interconnection Lines and Allowable Trade Capacities on These Lines¹

Table 1 – Summary of Net Transfer Capacities for 2012²

¹ Source: TEIAS

² Source: TEIAS

From	To	Connection Method	Allocation Period	Net Transfer Capacity (MW)	Capacity that can be allocated (MW)	Allocated Capacity (MW)
Turkey	Bulgaria	Synchronous Parallel	Monthly	Monthly determined	Monthly determined	0
Bulgaria	Turkey	Synchronous Parallel	Monthly	Monthly determined	Monthly determined	0
Turkey	Greece	Synchronous Parallel	Monthly	Monthly determined	Monthly determined	0
Greece	Turkey	Synchronous Parallel	Monthly	Monthly determined	Monthly determined	0
Turkey	Georgia	Directed Unit	Yearly	150	150	0
Turkey	Georgia	Isolated Region	Yearly	150	150	0
Georgia	Turkey	Directed Unit	Yearly	150	150	0
Georgia	Turkey	Isolated Region	2012 Winter	80	0	80
			2012 Spring	20	0	20
			2012 Summer	60	0	60
Turkey	Armenia	Directed Unit	-	0	0	0
Turkey	Armenia	Isolated Region	-	0	0	0
Armenia	Turkey	Directed Unit	-	0	0	0
Armenia	Turkey	Isolated Region	-	0	0	0
Turkey	Azerbaijan	Directed Unit	Yearly	0	0	0
Turkey	Azerbaijan	Isolated Region	Yearly	50	50	0
Azerbaijan	Turkey	Directed Unit	Yearly	100	40	60
Azerbaijan	Turkey	Isolated Region	Yearly	70	70	0
Turkey	Iran (1)	Directed Unit	Yearly	0	0	0
Turkey	Iran (1)	Isolated Region	Yearly	To be determined	To be determined	0
Iran (1)	Turkey	Directed Unit	Yearly	0	0	0
Iran (1)	Turkey	Isolated Region	Yearly	40	0	40
Turkey	Iran (2)	Directed Unit	Yearly	0	0	0
Turkey	Iran (2)	Isolated Region	Yearly	0	0	0
Iran (2)	Turkey	Directed Unit	Yearly	105	105	0
Iran (2)	Turkey	Isolated Region	Winter	400	250	150
			Spring	300	150	150
			Summer	200	50	150
			Autumn	300	150	150
Turkey	Iraq	Directed Unit	Yearly	0	0	0
Turkey	Iraq	Isolated Region	Yearly	50	50	0
Iraq	Turkey	Directed Unit	Yearly	To be determined	To be determined	0
Iraq	Turkey	Isolated Region	Yearly	To be determined	To be determined	0
Turkey	Syria	Directed Unit	Yearly	500	500	0
Turkey	Syria	Isolated Region	Yearly	500	0	500
Syria	Turkey	Directed Unit	Yearly	230	230	0
Syria	Turkey	Isolated Region	Yearly	0	0	0

Rules and procedures regarding import and export in Turkey are defined in the following legislation:

Electricity Market Law: It draws the general framework of import/export activities and participants of these activities such as wholesale and retail sales companies.

Import and Export Regulation: It covers principles of import and export, methods available in Turkey for import and export, rights and obligations of importers/exporters, principles and processes regarding capacity allocation and usage of this capacity.

Licensing Regulation: It describes licensing rules to conduct import/export activities.

Principles and procedures regarding capacity allocation and secondary commercial trading rights market: This secondary legislation describes the capacity allocation rules, conditions to enter into auctions, rules and methodology of the auctions in general for ENTSO-E connection (trading with Bulgaria and Greece). Detailed auction rules are separately published by TEIAS for each year in the beginning of related year; and these rules cover all of the details regarding the auctions, participants, procedures etc.

According to the related legislation exports and/or imports from or to the countries can be done by the approval of the EMRA in Turkey. In case stated in their license;

Wholesale companies can perform import and/or export activities.

Retail sales companies and distribution companies that have a retail sales license can perform import activities for voltage levels of 36 kV and below. This condition is stated in the law but there are currently no cross border lines at this voltage.

Export and/or import activities of these legal entities are regulated within the scope of their wholesale or retail sales license and no additional license is required.

Export/import methods in Turkey are as follows:

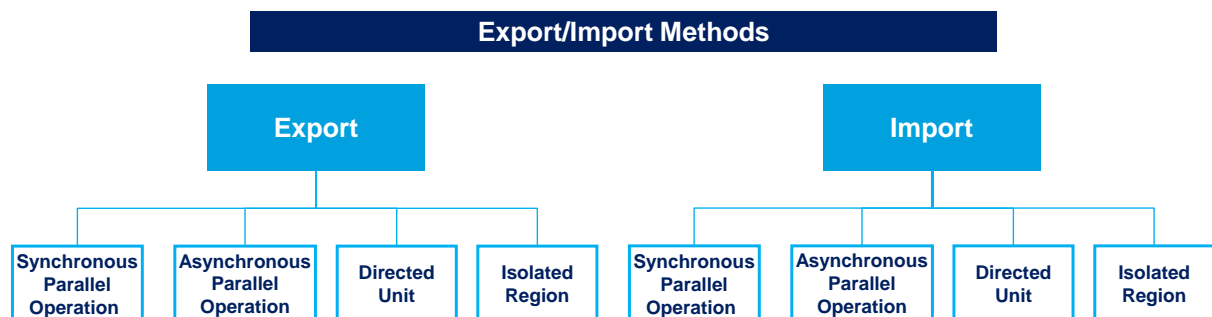


Figure 2 – Export/Import Methods in Turkey

Transmission operators of Turkey, Bulgaria and Greece have recently begun an auctioning process of interconnection capacity. Private sector players have shown great interest resulting with significantly boosted overall cross-border trade, as compared to previous years. As it can be seen in the following figure, in the last 5 years except 2011, import and export volumes were nearly at 0-100 GWh levels whereas in 2011 it increased to 2500-3000 GWh levels.

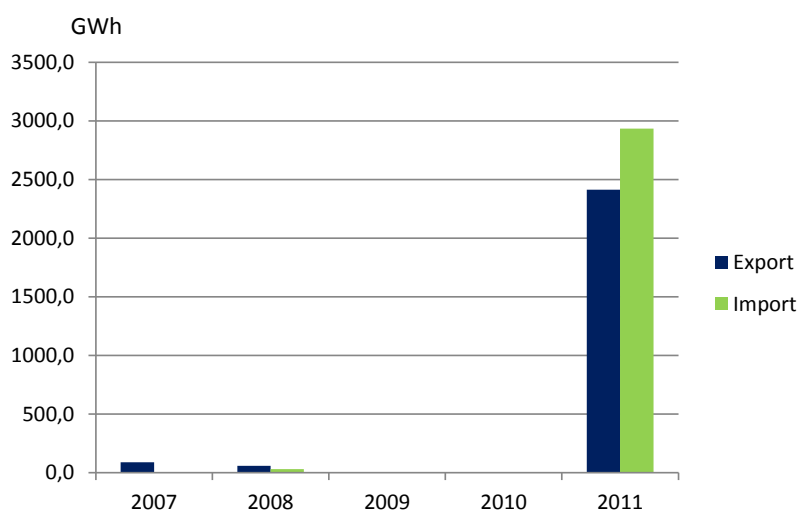


Figure 3 – Export / Import Volumes on European Interconnection for the Last Five Years

Aksa Enerji has also started exporting 500 MW of electricity to Syria in mid-2011, however, Syria has stopped importing energy from Turkey after 15 months of trade. Recently, EMRA announced that a market participant applied for importing right from Iran, 400 MW on 400 kV Başkale–Khoy line and 40 MW on 154 kV Doğubeyazıt – Bazargan. On the other hand, although there is an interconnection with Armenia, there is no flow on this line and no trade is expected in the near future.

In 2011, Turkey imported 4.6 TWh and exported 3.6 TWh of electricity, which can be seen in detail in the following table.

Table 2 – Import/Export Figures of Turkey in 2011³

2011	Import (kWh)	Export (kWh)
Georgia (Hopa-Batum)	218.545.481	333
Nakhchivan (İğdir-Babek)	329.909.746	19.422.178
Iran (Baskale - Khoy)	828.593.180	-
Iran (D.Beyazit - Bazergan)	245.936.210	-
Hamitabat - Marista 3	2.094.106.500	621.774.060
Babaeski - Neosanta	838.714.180	1.790.291.170
Iraq (Karkey-2 (PS3)-Zakho)	-	42.498.100
Syria (Birecik Halep)	-	1.170.640.806

Synchronous Parallel Operation

European Network of Transmission System Operators-Electricity (ENTSO – E) consolidates 42 system operators and the grids of 34 ENTSO – E member states. The network directs energy policies of ENTSO – E member states in order to;

- Operate a single market through grid synchronization;
- Ensure supply security;

³ Source: TEIAS

- Increase the efficiency of electricity generation, transmission, distribution and consumption to the top levels;
- Minimize environmental problems; and,
- Transform energy diversification into an opportunity.

On July 1, 2011 after tests were finalized, trading started between Turkey and the EU. Turkey is still in a trial period for full membership and recently it was announced that this trial period has been extended until autumn 2013. Subsequent to the expiry of the trial period, TEIAS will be counted as a full member of “The Synchronous Grid of Continental Europe”.

By ENTSO – E integration;

- Turkey commenced operating synchronously with the European System.
- New trade opportunities emerged between Turkey and ENTSO - E member states. New opportunities of trade emerged and electricity consumption with lower prices became possible due to timely differences at peak load blocks of ENTSO – E member states.
- A more stable frequency has been attained. The impact of this progress for the generation sector is less primary and eventually less secondary reserve obligations and more stable working conditions for generation companies and consumption facilities connected to the high voltage grid.

As can be seen in Table 3, the interconnections between Turkey and Bulgaria and between Turkey and Greece are working synchronously. 50% of the interconnection capacity is auctioned by TEIAS, %32,5 is auctioned by Bulgarian TSO and the remaining 17,5% of the capacity is auctioned by Greek TSO. The maximum capacity limit that can be allocated is currently kept at 500 MW by ENTSO-E and other possibilities have not been approved by ENTSO-E yet. Currently, monthly capacity allocation auctions are held by TEIAS, however in the future auctions covering longer periods may be considered. In case of longer period auctions, it should be considered that allocation duration of an interconnection line capacity for a specific wholesale company cannot exceed one year at a time; except for the lines constructed by that participants as stated in Article 17 of the Import and Export Regulation.

Capacity auctions are conducted by TEIAS via an auction platform (TCAT). This auction is announced on the platform, and this announcement includes bidding time, time of announcing the auction results, and issues regarding objections. This allocation auction is done on a 50-50 basis that is 50% of the capacity is auctioned on one side and the remaining 50% on the other side.

Allocation of capacity open to utilization is done by auction to the market participants that are appropriate for attendance. Only participants that have wholesale license given by EMRA can attend the auctions.

The general procedure to apply for interconnection capacity is as follows:

- Every wholesale trading company can take part in the import, export or both auctions that is conducted in his country, provided that they are registered to TCAT.
- In order to attend the auctions or to be the counterparty of an exporter in Bulgaria or Greece, Turkish companies should apply for registration to TCAT⁴, the interconnection auction platform of TEIAS. For registration to TCAT, participants should submit signed version of interconnection auction rules document, declare which auctions to be attended, provide communication information, have electronic signature; and also they should apply to TEIAS for registration.
- The licenses of the companies that are registered in TCAT are automatically updated by EMRA to include the related import/export permit.
- For every auction to be attended, a collateral amount of Euro 50,000 must be reserved to the TSO as a letter of bank guarantee. This letter of guarantees should be submitted to TEIAS in the registration phase.

Some points in participation in the auctions in Turkey are as follows:

- Generally auctions in Turkey are conducted 4-5 days after the auctions in Bulgaria or Greece.
- The company that is allocated some capacity from the auction has two cost items:
 - Capacity fee: Determined by the auction and paid to the TSO after the auction
 - System Usage Fee⁵: Determined by TSO (TEIAS) and paid to the TSO monthly
- If the companies having some capacity allocated from the auctions want to use that capacity (import or export energy), they have to make bilateral agreements with counter parties. The counter party information is nominated via TCAT until 13:00, on 2 days before the import/export period starts.
- The company that is importing energy to Turkey has two cost items:
 - Electricity price: Determined by the two counter parties involved in the trade
 - Transmission system loss cost: Determined in hourly resolution by TEIAS each month (hourly transmission system loss coefficient) and paid considering the energy transferred through the interconnection.
- During a monthly import/export period, every day until 10:00 hours, energy amounts in MW are nominated via TCAT and the amounts are approved by the counter party.

⁴ The link of TCAT system is <https://tcat.TEIAS.gov.tr/>

⁵ In case a participant in Bulgaria or Greece owns the capacity right, the counterparty in Turkey do not have to make capacity fee or system usage fee payments.

- During a monthly import/export period, every day until 16:00 hours, energy amounts in lots (0.1 MW) are nominated as a bilateral contract by the importing/exporting party in Turkey via MMS. NLDC, as the counterparty also notifies hourly bilateral contract amounts considering the amounts registered in TCAT. If the amounts notified by the participant and NLDC matches, the transaction becomes valid in MMS for balance responsibility/imbalance calculations.

Table 3 – Interconnection Auction Results (2012)⁶

Origin	Destination	Starting From	Valid Until	Capacity (MW)	Capacity Fee (€/MWh)
Bulgaria	Turkey	01.01.2012	01.02.2012	25	12,07 €
Bulgaria	Turkey	01.02.2012	01.03.2012	50	3,42 €
Bulgaria	Turkey	01.03.2012	01.04.2012	25	6,13 €
Bulgaria	Turkey	17.03.2012	01.04.2012	25	1,54 €
Bulgaria	Turkey	01.04.2012	23.04.2012	25	2,22 €
Bulgaria	Turkey	01.04.2012	01.05.2012	25	2,15 €
Bulgaria	Turkey	01.05.2012	01.06.2012	41	0,00 €
Bulgaria	Turkey	01.06.2012	09.06.2012	67	7,31 €
Bulgaria	Turkey	01.06.2012	01.07.2012	133	9,10 €
Bulgaria	Turkey	01.07.2012	01.08.2012	133	22,32 €
Bulgaria	Turkey	01.08.2012	01.09.2012	133	12,21 €
Bulgaria	Turkey	01.09.2012	01.10.2012	133	6,43 €
Bulgaria	Turkey	24.09.2012	28.09.2012	67	0,59 €
Bulgaria	Turkey	01.10.2012	01.11.2012	100	6,10 €
Bulgaria	Turkey	15.10.2012	01.11.2012	33	2,92 €
Greece	Turkey	01.12.2011	01.01.2012	20	0,00 €
Greece	Turkey	01.01.2012	01.02.2012	67	0,31 €
Greece	Turkey	01.02.2012	01.03.2012	67	1,00 €
Greece	Turkey	01.03.2012	01.04.2012	67	0,84 €
Greece	Turkey	01.04.2012	01.05.2012	55	0,00 €
Greece	Turkey	02.04.2012	21.04.2012	10	0,00 €
Greece	Turkey	01.05.2012	01.06.2012	67	0,01 €
Greece	Turkey	09.06.2012	01.07.2012	67	2,67 €
Greece	Turkey	01.07.2012	01.08.2012	67	10,11 €
Greece	Turkey	01.08.2012	01.09.2012	67	4,65 €
Greece	Turkey	01.09.2012	24.09.2012	67	1,59 €
Greece	Turkey	28.09.2012	01.10.2012	60	0,00 €
Greece	Turkey	01.10.2012	01.11.2012	60	0,00 €
Greece	Turkey	01.10.2012	15.10.2012	33	0,42 €
Turkey	Bulgaria	01.12.2011	01.01.2012	20	0,00 €
Turkey	Bulgaria	01.04.2012	01.05.2012	5	0,00 €
Turkey	Bulgaria	01.05.2012	01.06.2012	5	0,00 €
Turkey	Bulgaria	01.06.2012	09.06.2012	20	0,00 €
Turkey	Bulgaria	01.06.2012	01.07.2012	55	0,00 €
Turkey	Greece	01.12.2011	01.01.2012	50	6,50 €
Turkey	Greece	01.01.2012	01.02.2012	50	0,10 €
Turkey	Greece	01.02.2012	01.03.2012	50	1,02 €
Turkey	Greece	01.03.2012	01.04.2012	50	1,50 €
Turkey	Greece	01.04.2012	01.05.2012	50	4,53 €
Turkey	Greece	02.04.2012	21.04.2012	25	4,32 €
Turkey	Greece	23.04.2012	28.04.2012	25	4,23 €
Turkey	Greece	01.05.2012	01.06.2012	50	0,53 €
Turkey	Greece	09.06.2012	01.07.2012	50	0,05 €
Turkey	Greece	01.10.2012	01.11.2012	20	0,00 €

⁶ Source: TEIAS

Methods other than synchronous parallel operation

In order to apply for trading activities via methods other than synchronous parallel operation (e.g. isolated region, directed unit) the following information and documents should be presented to EMRA:

- Importing Country / Country to export;
- Fuel type of the imported energy (if import);
- Maximum power of the imported /exported energy (MW) and yearly amount (kWh);
- Starting date and activity period;
- Domestic delivery zones;
- Method to be used in import; and,
- Pre-agreement, protocol or letter of intention;

Pre-agreement, protocol or letter of intention made with the relevant Ministry and/or authorized institution regarding energy import/export in the counter country shall be approved by the Turkish consulate in the relevant country or shall be approved according to the provisions of “Agreement Regarding Elimination of Approval Obligation of Foreign Official Documents” prepared within the framework of The Hague Conference on Private International Law.

In case the above mentioned information and documents are presented to EMRA, the process goes on as shown in the following figure:



The approved applicants are notified to fulfill their obligations in 90 days. In case the obligations are fulfilled, the statements regarding the permissions of export/import activities are included in their licenses and published in TEIAS website.

Figure 4 – Evaluation process for import/export applicants

After the wholesale company is approved to have capacity allocation right, he should sign the interconnection usage agreement with TEIAS and pay the license amendment fee to EMRA within 90 days. Additionally, relevant bilateral agreements with the counterparty should also be presented within this period. These referred agreements should also be approved by the Turkish consulate in the relevant country or shall be approved according to the provisions of “Agreement Regarding Elimination of Approval Obligation of Foreign Official Documents” prepared within the framework of The Hague Conference on Private International Law. After all obligations are fulfilled, import/export activity of the company is inserted in the license and published in TEIAS website.

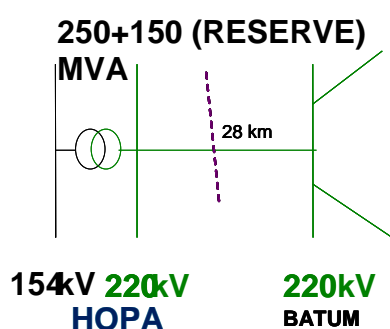
Capacity allocation is finalized after all above steps are completed. Allocation duration of an interconnection line capacity to a participant cannot exceed one year at a time; except for the lines constructed by that participants as stated in Article 17 of the Import and Export Regulation. It is very important to underline that this regulation regulates only the allocation rules for capacity on interconnections which is being allocated by Turkish TSO. For allocation rules on the other side of the border the specific interconnection operating agreement, international agreements and the related regulations of the specific country should be analyzed.

At this point it should be noted that if a wholesale company constructs a new interconnection line with its own funds, capacity can be allocated to that company for more than one year; however, this option is never used in Turkey and detailed principles and procedures regarding line construction, capacity allocation etc. has not been published yet. For this option to be available to be exercised the relevant rules (principles and procedures) should be developed by EMRA. The regulation states that EMRA should consider the technical views of TEİAŞ while developing such rules.

Turkey – Georgia Interconnection (Hopa-Batumi 220 kV, 28 km)

Table 4 – Properties of Turkey – Georgia Interconnection⁷

Type	Total Transmission Area (mm ²)	MCM	Current-carrying capacity (A)	Summer Capacity (MVA)	Spring/Autumn Capacity (MVA)	Thermal Capacity (MVA)
Rail	517	954	755	240	393	287



Since synchronous parallel operation between Turkey and Georgia will not be possible until Georgia joins to ENTSO-E, at present cross-border trade between two countries is possible based on two methods:

Directed Unit Method:

Export: It's possible to transfer a maximum power of 150 MW by inducing units from Hopa TPP (2x25 MW) and Muratlı HPP (115 MW).

Net Transmission Capacity: 150 MW

Capacity that can be allocated: 150 MW

Allocated Capacity: 0 MW

⁷ Source: TEİAŞ

Import: It's possible to transfer a maximum power of 150 MW by directing units from Enguri and Vardnili HPPs; and notification of this inducement by Georgian TSO.

Net Transmission Capacity: 150 MW

Capacity that can be allocated: 150 MW

Allocated Capacity: 0 MW

Isolated region method:

Export: It's possible to transfer a 150 MW power by forming an isolated region in Acara Region. With reference to the protocol signed between Turkish and Georgian Ministries on 13.12.2010 and Board Decision of EMRA dated 24.02.2011; TETAS has priority for 50% capacity of the Interconnection Line.

Net Transmission Capacity: 150 MW

Capacity that can be allocated: 150 MW

Allocated Capacity: 0 MW

Import: With reference to the protocol signed between Turkish and Georgian Ministries on 13.12.2010 and Board Decision of EMRA dated 24.02.2011; TETAS has priority for 50% capacity of the Interconnection Line, electricity was imported from Georgia to Turkey between 08.04.2011 and 31.12.2011 by a private company, Geotur Elektrik Enerjisi İthalat İhracat Toptan Satış A.Ş. and TETAS with 50%-50% share. Since the license duration of the private company ended, import was realized only by TETAŞ between 01.01.2012 and 08.05.2012. Since 08.05.2012, in line with the Board Decision of EMRA dated 28.03.2012, electricity is being imported by this private company and TETAS with 50%-50% share.

Net Transmission Capacity: 150 MW

Capacity that can be allocated: 0 MW

Allocated Capacity: 150 MW

Currently, Isolated Region Method is used for importing activities. Seasonal net transmission capacities in the region differ since there are currently operating or under construction hydro power plants in East Black Sea Region.

For October, November, December, January, February (Winter):

Net Transmission Capacity: 80 MW

Capacity that can be allocated: 0 MW

Allocated Capacity: 80 MW

For March, April, May, June (Spring):

Net Transmission Capacity: 20 MW

Capacity that can be allocated: 0 MW

Allocated Capacity: 20 MW

For July, August, September (Summer):

Net Transmission Capacity: 60 MW

Capacity that can be allocated: 0 MW

Allocated Capacity: 60 MW

Georgian companies can trade energy to Europe through the interconnection between Georgia – Turkey; and then the interconnection between Turkey – Greece or Turkey – Bulgaria.

However, the Georgian companies either have to set agreements with the companies in Turkey, or they have to gather wholesale license in Turkey. Additionally they have to get the commercial transmission right in capacity allocation auctions for both of the interconnections.

Currently isolated region methodology is used as import method from Georgia, and capacity is allocated between TETAS and Geotur Elektrik Enerjisi İthalat İhracat Toptan Satış A.Ş. with 50-50% share.

Licensing Procedures to import from Georgia (Current Status over the current operational line)

At present market participants that want to take part in cross-border trading activities with Georgia shall follow the steps stated below:

Application to EMRA for import/export activities

For a private energy generator in Georgia to export electricity to Turkey, he has to sign a bilateral contract with a market participant in Turkey that has a wholesale license which includes articles related to import and export activities in their licenses. In other words, Georgian entities cannot be involved in trading activities in Turkey, unless they set up a local wholesale trading company to obtain a license from EMRA or sign a bilateral contract with a wholesale trading company in Turkey. Below is the general procedure to perform import/export activities:

- As stated in detail in “Figure 3 - Evaluation process for import/export applicants”; in order to import/export energy from Georgia, a market participant in Turkey has to apply to EMRA with the following information and documents:
 - Country of import/export;
 - Fuel type used in generation of electricity for import;
 - Yearly export volume (kWh) and maximum export capacity (MW);
 - Start date of import/export activity and its duration;
 - Delivery points of electricity in the border;
 - Import/Export methodology; and,
 - Protocol, letter of intent or pre-agreement signed with related Ministry and/or authorized Company that covers the information mentioned above regarding the import with neighboring country
- In case these documents are fully submitted to EMRA, EMRA asks opinion of Ministry of Energy and Natural Resources regarding political reasons (such as international relations) as well as System Operator regarding technical issues.
- If the opinion is positive, application is published in website of EMRA and other wholesale and retail sales licensee holders can also apply to EMRA to use the same line and take part in import/export activities within twenty days following the publication of application.

- In case there are more than one application, System Operator is informed about those applications to finalize the work regarding capacity allocation within 45 days.

Participating to wholesale market activities operated by MFSC

All wholesale license holders in Turkey (whether they are being involved in cross-border trading activities or not) has to be registered to MFSC in order to take part in organized wholesale electricity market activities. In order to register as a market participant, wholesale license holder has to;

- Apply to MFSC within 15 working days following the effectiveness date of their license
- They have to submit information regarding their legal entities to the Market Management System (MMS) for approval
- Following this, they have to submit following documents to MFSC in hand;
 - Market Participation Agreement,
 - A copy of their licenses,
 - Legal entity registration form,
 - The authorization certificates of persons with signatures on the documents and the original or notarized copies of their specimen signatures.
 - Photocopy of the Commercial Register Gazette.
- MFSC completes the review and evaluation regarding the application within 10 working days
- If MFSC detects any shortcomings, it notifies the market participants and gives 10-day period for the elimination of shortcomings.
- Market participants whose application files have been accepted or who have completed the shortcomings within 10 working days are informed by MFSC that their applications have been accepted.
- If the participant wants to bid in day ahead market, they have to sign day ahead market participation agreement too.

Following registration of the wholesale company to MFSC, he has to sign a bilateral contract with the counterparty (e.g. Hydro Generator) in Georgia to sell the electricity in day ahead market and through bilateral contracts as stated before.

Detailed information regarding “How Georgian entities might be involved in daily market process” is explained in Report 1 in detail.

5.0 CHANGES ANTICIPATED IN THE TURKISH IMPORT & EXPORT PROCEDURES

Changes anticipated in the relevant legislation

At present isolated region method is used for cross-border trading between Georgia and Turkey, and the rules applied for licensing procedures are the ones applied for “asynchronous parallel” connection. However, with the new lines constructed, asynchronous parallel method will be used, which will be the first example for Turkey and by definition this falls again under the “asynchronous parallel” connection category.

It is expected that, in parallel with signing of the Interconnection Operating Agreement and deciding the cross-border trade methodology, there might be some amendments in rules and procedures on import / export through this interconnection and new licensing procedures could be defined for asynchronous parallel (Back-to-Back) connections. These changes could be expected as amendments in the existing Turkish Electricity Market Export – Import Regulation and introduction of additional secondary regulations and procedures.

In addition, although getting import/export right for a licensee is defined in the Import and Export Regulation, it is thought that, similar to trading with synchronous parallel connection described in detail in the “Auction Rules for Capacity Allocation“, a document explaining trading rules for Back-to-Back connection might be developed and published in order for traders to get more information about the nominations and timeline of the processes.

Till now, TEIAS did not apply to EMRA for such a Regulation amendment. However, in the near future, together with finalization of lines’ construction works and determination of the cross-border trading methodology, TEIAS is expected start developing such rules or amendments in licensing procedures similar to the synchronous parallel operation defined above.

For the time being, TEIAS is presently working on a draft Interconnection Usage Agreement to be signed between TEIAS and the Interconnection capacity user in Turkey for asynchronous parallel connection, which also covers Akhaltsikhe - Borçka back-to-back connection. This Agreement is expected to cover technical and financial provisions as well as responsibilities of the counterparties.

Another issue to consider regarding import/export licensing procedures is the draft Electricity Market Law sent to parliament in late December 2012. In the current Law, the cross border trade (both export and import) is permitted to licenses of TETAŞ, wholesale and retail trade; however in the new draft the wholesale and retail trading licenses are combined under supplier license. In the latest amendment draft, cross border electricity import is permitted for the companies that have supplier licenses; export is permitted for companies that have the supplier licenses and generation licenses. These changes should also be considered by TEİAŞ and EMRA in revising the relevant Regulations.

On 31th January 2013, there has been some amendments in the Licensing Regulation that prioritizes license applications based on purpose (e.g. natural gas storage licenses, electricity generation licenses based on fuel and other sources (excluding natural gas), liquefied natural gas storage licenses, petroleum refinery licenses, electricity generation licenses based on natural gas, and, lastly, petroleum storage licenses), however, no legislation amendment regarding prioritizing import permission for a specific kind of energy source from Georgia is in the agenda.

Changes anticipated in Operating Procedures

New interconnection projects are expected to be completed by 2015, which can be seen in the following Figure.



Figure 5 – Interconnection Projects – Planned Situation in 2015⁸

With the expected projects, trade between Turkey and Europe is expected to be increased nearly by three times; in case full membership to ENTSO-E has been established. Harmonization of Turkish power system with the ENTSO-E will enable the cohesiveness of the Turkish Power System Transmission Grid Code in line with ENTSO-E RG CE technical/market requirements. Turkey is developing its national market and after full membership of ENTSO-E, Turkey could join a possible Romania – Bulgaria – Serbia - Hungary coupling. At present, studies to strengthen the interconnection line between Turkey and Bulgaria are going on as an alternative to Romanian undersea cable and study group aims to finalize these studies by the end of 2013. With this improvement, it is expected to transfer energy from Romania to Turkey through Bulgaria.

Georgia is another country that Turkey wants to increase the trade between, due to increasing demand of Turkey and rich renewable energy resources in Georgia. After planned interconnections with Georgia are completed by 2013, up to 1050 MW of physical capacity will be available, whereas intergovernmental cross border electricity trade agreement allows trade up to 1000 MW. However, Turkey also has rich hydro resources in north and northeast region and new power plants such as Deriner, that has just been opened to operation and Arkun HEPP, that is expected to start operation soon; therefore, with the existing transmission lines within Turkey, nearly 700 MW of energy is allowed to be imported during summer time and only 300 MW of energy is allowed to be imported during spring time, from Georgia interconnection. For the interconnection capacity to be used fully, Ağrı – Van – Siirt and Keban – Bağıştaş – İspir – Borçka transmission lines have to be completed. Expected completion time of Ağrı – Van – Siirt line is considered as 2013 and of Keban – Bağıştaş – İspir – Borçka line is considered as 2014, in Investment Plan of TEIAS. TEIAS authorities state that, after these lines are completed, another 380 kV

⁸ Source: TEIAS

line between Georgia and Turkey may be built till 2017, which will allow transmission of nearly 1500 MW energy between the two countries cumulatively.

Plans about interconnections with other neighbors of Turkey are as follows:

600 MW on 400 kV Van – Iran border transmission line (Back to Back station) is expected to be completed by 2015. After this line is completed, studies regarding a second line are expected to start.

Reinforcement on Turkey – Iraq interconnection is continuing and expected to be finalized during autumn this year. Currently trade is possible via isolated region method, however studies for Back-to-Back connection is being performed for transfer of nearly 500 MWs. New transmission lines are also in study phase.

In order to enhance more electricity transfer on Syria border, planning studies of DC Back-to-Back station on Birecik – Halep transmission line has been continuing; and is expected to be completed by 2015. However, because of the political circumstances in Syria, most of the studies were stopped.

The effect of these changes on Georgian hydro plants and power traders

As cross border trading activities between Turkey, Greece and Bulgaria continue to develop, Turkish electricity market will become the role model for Georgian market and catalyze the development of Georgia electricity market. As a consequence, a fast progress is going to be observed in the utilization of hydro potential of Georgia, which is the ultimate goal. In order to initiate trading between Turkey and Georgia, various trading alternatives have to be evaluated and a proper model has to be designed.

On the other hand, in order to facilitate and maintain cross border electricity trading between Turkey and Georgia, in the short term; issues regarding infrastructure should be resolved and in the medium and long term Georgian electricity market should be established with its institutions and rules that best serves for cross border trading activities.

As described in the previous sections, extending interconnection capacity between Georgia and Turkey as well as increasing capacity of Turkey with other countries will increase the volume traded with Georgia. In addition, installation of back to back station will allow other trading methodologies such as explicit and implicit auctions other than using isolated region methodology.

These targets may be reached more easily if both public and private corporations of both countries work cooperatively. These are the necessary steps that could be taken to accelerate the process to reach these targets;

Providing support of Turkish electricity market institutions in the process of designing and establishing Georgian electricity market.

Participation of Georgian public and private electricity sector representatives to the conferences, events and training programs organized in Turkey and strengthening the cooperation between parties.

- Incentives for the Turkish investors in Georgia,

- These actions will help create new opportunities for the cross border trading between Turkey and Georgia by accelerating the process of establishing the Georgian electricity market.

Additional main points that can have an effect and contribute to the development of cross border trading between Turkey and Georgia are as follows:

- In addition to the interconnection between Turkey and Georgia, seasonal congestion in the infrastructure, arising from operating hydropower plants in north and northwest part of Turkey has to be relaxed to boost import of electricity into Turkey from Georgia.
- Low cost of electricity generation in Georgia makes importing electricity to Turkey very attractive for Turkish off-takers.
- Since the beginning of the cross border trading between Turkey, Greece and Bulgaria, trading is mostly imported from neighbor countries to Turkey due to higher prices. As trading starts between Turkey and Georgia, there may be trading opportunities to export electricity from Georgia to Greece and Bulgaria, in the long run. Also new investments both in infrastructure and plant side will be triggered by the help of development in trading activities. However, appropriate trading mechanisms and the infrastructural investments should be completed for such trade.
- As the political circumstances in Syria, Iran, Iraq and Turkey recovers, these countries might be new electricity export markets for Turkey. That may also create new trading opportunities for Georgian electricity market in the long run.
- Time zone differences between Europe and Georgia is another factor that paves the ways for electricity trading between Turkey and Georgia.

Intergovernmental cross border electricity trade agreement signed between Georgia and Turkey: Although the Turkish Import and Export Regulation requires capacity on an interconnection line to be allocated to a participant for at most one year at a time; (which may seem to create problems for long term off-take agreements for new hydro investments in Georgia) it should be noted that according to the intergovernmental cross border electricity trade agreement between Georgia and Turkey (signed between Turkish and Georgian Ministries on 20th January 2012 and approved by the Assembly in December 2012), exporting country will allocate the capacity. Therefore one year period allocation restriction on the Turkish side will not be binding for exporting energy from Georgia to Turkey. In other words, Georgian legislation will determine the allocation method, period, etc. since Georgia will be the exporting country most of the time; therefore, one year rule for capacity allocation is only valid for cases when Turkey allocates the interconnection capacity. If Georgia allocates the interconnection capacity to a Georgian entity for a longer period than one year, the Turkish counterpart of the Georgian exporter is able to conduct this trade without being tied by Turkish rules. Turkish counterparty is allowed to purchase that energy from Georgia, but he will inform EMRA about the trade agreement, he will apply for license amendment and pay license amendment fee every year according to the current legislation.

For this reason, related rules, regulations and procedures should be in place on the Georgian side in order to make long term PPA's (or off-take agreements) possible. The rules should consider ways to secure long term capacity allocation for small HPP's, or prioritizing run off river HPP's in capacity auctions. In that case, System Operator of Georgia shall provide information to Turkish System Operator regarding the capacity of the contracts of exporters for the relevant utilization period and market requirements for such import/export operations.

6.0 MODIFICATIONS THAT COULD BE MADE TO TURKISH IMPORT & EXPORT LICENSING PROCEDURES

As mentioned earlier, with the current market structure, exports and/or imports from or to the neighboring countries can be done by the approval of the EMRA in Turkey. In case the required conditions take place in their license, wholesale companies might conduct import and/or export activities. Export and/or import activities of these legal entities are regulated within the scope of their wholesale or retail sales license and no additional import/export license is required.

Turkey is synchronously connected to ENTSO-E and trade between Turkey and Bulgaria / Greece is conducted via monthly auctions. EMRA automatically inserts the relevant information that all wholesale companies may perform import and/or export activities, to their licenses; and if the companies get the commercial operation right on an interconnection, EMRA again inserts the relevant right to the relevant wholesale license without any application of the company and with no charge. However, this provision is only valid for synchronous parallel connection and as mentioned in the previous section, current import and export regulation in Turkey requires application for license amendment and payment of license amendment fee every year in case of asynchronous connection. Back-to-back connection will be experienced for the first time in Turkey with Akhaltsikhe – Borçka line. Therefore it is strongly recommended to adopt new and more practical rules and provisions regarding capacity allocation in cross border trade through asynchronous connections that are similar to synchronous connection capacity allocation and trade permission rules (such as allowing automatic renewal of the license without application and not paying license amendment fee each year for long term contracts in Turkish side) in order to simplify and speed-up the procedures as well as enhance trade between Turkey and Georgia so that utilization of the line is maximized.

Another issue regarding the interconnection between Turkey and Georgia is that the intergovernmental cross border trade agreement gives priority to electricity generated from renewable energy resources in allocating the available transmission capacity. Although this topic is stated in the referred agreement, currently, there is no mechanism defined in the related legislation that gives renewable energy projects the priority to obtain interconnection capacity. However, since international agreement governs all domestic regulations, this situation might cause amendments in the current rules. Therefore, EMRA has to make amendments in the relevant regulations in order to prioritize import/export of electricity generated from renewable energy resources in order to enhance the rules of the agreement in operation.

On the other hand Georgian HPPs cannot be given the same rights as Turkish HPPs, since they are not licensed in Turkey and are not registered to the Market Operator in Turkish electricity market. Turkish HPPs have significant rights within the

balancing mechanism (day ahead market and balancing power market) in line with the Balancing and Settlement Regulation in Turkey and they do not have any limitation to sell the energy they generated. However Georgian HPP's should take into consideration the available transmission capacity in interconnection and since they are not registered and licensed balancing units in Turkey, they can sell electricity only if they enter into a trade agreement with a Turkish counterparty.

The only way, that they can be given some similar rights as Turkish HPPs in trading energy, can be implicit auction methodology (market coupling), where Georgia is defined as one trade zone and Turkey is another. By this way, both HPPs can join to the day ahead market operating under the same rules through submitting their bids/offers. But, it shall again be noted that ATC limitation between the trade zones will be taken into account when energy is transferred between the two countries. As it will be described in the following section in detail, implicit auction can only be possible in the medium term, since it requires many changes in the current legislation and development of a day ahead (spot) market in Georgia. It shall also be emphasized that implicit auction only allows trading energy in the day ahead or intraday market. Since the rules and rights regarding the Turkish HPPs are mainly regulated in Turkish Electricity Market Law and its related secondary legislation, all of the rights that are given to the Turkish HPPs (such as participation to renewable energy support mechanism, conditions to get generation licenses, incentives etc) cannot be given to the Georgian HPPs.

Further Cross-Border Trade Methodologies

Cross- Border Trade Methodologies

As briefly mentioned in the first report and will be discussed in Presentation 4 in more detail, in Europe commonly used methods for congestion management between the borders are implicit and explicit auctions. In addition, in some regions hybrid model where these two auction methods are combined can also be used.

Explicit auction is widely used for long term capacity allocation in interconnections among European countries. The owner of the capacity is System Operator and SO allocates this capacity through yearly, monthly or daily auctions. Participants of the auctions give bids for the capacity allocation and all of the bids are ordered from the highest to the lowest price. Capacity is allocated starting from the highest one until the available capacity is used up and usually the price is set to the bid price of the lowest allocated bid. In explicit auction methodology, energy and capacity trading are done independently. The main challenge with the explicit auction is coordination between the TSOs.

On the other hand implicit auction (market coupling, market splitting) is used for short term capacity allocation, energy and capacity is allocated together and energy price reflects both congestion cost and energy cost. In this method, energy flow is always from low price region to high price region. Implicit auction is presently used in Scandinavian countries, between France-Belgium-Netherlands, etc. Both of these congestion management

Although implicit auction has many advantages compared to explicit auction, in the near future, explicit auction is expected to be applied between Georgia and Turkey since explicit auction does not require operational and aligned energy exchanges (spot markets) on both sides of the border. However, during design of the auctions, auction methodology and period, bidding, timeline, share of capacity to be allocated shall be designed so that maximum benefit for both sides is achieved. In addition, communication between the TSOs should be well defined.

However, in the medium term, following the start of an operational balancing market with at least hourly settlement periods and introduction of a day-ahead market (centralized electricity spot market, where mainly “next day delivery” products in hourly resolution are traded) in Georgia, implicit auction is recommended as a possible efficient trading method between the two countries. Under such an arrangement, it can be expected that generally Georgian trade region will be lower price zone, whereas Turkey will be higher price zone and direction of flow will be from Georgia to Turkey. By this way, traders in Georgia will have the chance to sell their energy with higher prices. Apart from this, daily implicit auction is proven to be the most efficient way of maximizing capacity utilization.

In order to implement implicit auction, a new regulation shall be prepared that covers the rules for both countries such as the timeline for day ahead trading and participation procedures for the implicit auction. Besides, TSO of both countries has to cooperate in order to decide and publish to market participants the available transmission capacities between these two countries in daily in line with Turkish market rules.

In terms of licensing procedures, if the cross border methodology becomes explicit auction where the capacity is allocated in daily, weekly or monthly basis between importers/exporters similar to synchronous parallel operation (with Bulgaria and Greece) or if day ahead market starts operation in Georgia and the methodology becomes implicit auction, application to EMRA for amending the license each time (after each auction) to add an Article regarding export volume (kWh) and maximum export capacity (MW) or start date of import/export activity and its duration is not viable. Instead, a method similar to synchronous parallel connection shall be defined in licensing procedures that states all wholesale companies can participate to the auctions and can import/export energy for the duration and volume if they are entitled to do so. Besides, Interconnection Operating Agreement between Turkey and Georgia should be designed by considering that implicit auctions may be implemented in the medium term; together with the required changes in the licensing procedures. Additionally, it can also be recommended that current import/export and licensing rules may be updated in a way that enables implicit auctions in ENTSO-E interconnection.

7.0 CONCLUSION

As mentioned throughout the report, Turkey has interconnections between Bulgaria, Greece, Georgia, Armenia, Iran, Iraq and Syria. Exports and imports with these countries can only be done by a licensed wholesale company in Turkey and with prior approval of the Regulator, by inserting this activity to their licenses.

Turkey is synchronously parallel connected to ENTSO-E and monthly auctions are held in allocation of the capacity in the interconnection line. Other than synchronous parallel connection, Turkey has small amounts of trade between other neighboring countries. From the neighboring trading partners, Georgia is a substantial candidate with its rich hydro resources and with the new interconnection investments with Georgia, back to back stations and transmission line investments inside Turkey, volume of the cross-border trade is expected to increase.

On the other hand, since, most of the cross border trade is done through ENTSO-E connection, rules and procedures of trade between Turkey and Europe are well defined, and trade is supported by a trading platform. In order to enhance cross border trade between Turkey and Georgia, rules and procedures should be well defined and clear trading rules should be applied. EMRA has not done any studies on licensing and import/export procedures for Georgia interconnection yet, however, TEİAŞ should propose such kind of studies to EMRA before the interconnection line is in operation. Since intergovernmental cross border electricity trade agreement between Georgia and Turkey states that exporting country will allocate the interconnection capacity, Georgia should develop well defined trade and capacity allocation rules as being the exporting country most of the time. By this way, long term capacity allocation may enhance long term trade and clear rules may enhance trade volume between the two countries.

On the medium term it is strongly advised to consider implicit auction method between Georgia and Turkey as this method is proven to optimize the capacity costs for the users and best utilize the interconnection capacities between countries. For this purpose, relevant regulation amendments should be arranged that enable implicit auction in the Georgia-Turkey interconnection.

Within the scope of this report, some recommendations for licensing and import/export rules and procedures for trade between Turkey and Georgia are discussed.

As a next step and for the future design, HIPP's conceptual ETM design is evaluated within the scope of the Turkish electricity market and expectations, in order to enhance cross border trade and facilitate multi-year energy supply agreement between the two countries. Turkey's ENTSO-E process will be evaluated and how Turkey has prepared to sell energy to SEE region before connecting to ENTSO-E will also be discussed.

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