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GAP ANALYSIS BETWEEN DRAFT ENERGY LAW AND GRID CODE FOR GAS MARKET RULES

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19 September 2018

This publication was produced for review by the United States Agency for International Development. It was prepared by Deloitte Consulting LLP. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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CONTRACT NUMBER: AID-OAA-I-13-00018

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LANGUAGE: ENGLISH

19 SEPTEMBER 2018

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DATA

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Practice Area: Electricity Market Development
Key Words: Natural Gas Market Concept Design

ACRONYMS

CEGH	Central European Gas Hub
DSO	Distribution System Operator
EC	Energy Community
E-Control	Energie-Control Austria
EFET	European Federation of Energy Traders
ETS	Electronic Trading System
EU	European Union
GNERC	Georgian National Energy and Water Supply Regulatory Commission
ISO	Independent System Operator
OTC	Over-the-Counter
PSV	Italian Virtual Trading Point
TSO	Transmission System Operator
USAID	United States Agency for International Development
VTP	Virtual Trading Point
ZEE	Zeebrugge Hub

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INTRODUCTION AND RECOMMENDATIONS

This document concerns the best approach to implement Gas Market Rules for Georgia and relative to the proposed Energy Law, expected to be passed at the end of 2018.

A fully functioning and interconnected internal energy market for Europe is crucial for maintaining security of energy supply, increasing competitiveness and ensuring that all consumers can purchase energy at affordable prices. Leading international practices suggest that cross-border gas networks operate according to rules that regulate who can use them and under what conditions. In the past, these rules were drawn up individually nationally. However, with the increased number of interconnections and trade between countries in the internal energy market, European Union (EU)-wide rules have become increasingly necessary to effectively manage gas flows. These rules governing an internal energy market, known as network codes or guidelines, are legally binding European Commission Implementing Regulations. In addition, they govern all cross-border gas market transactions.

European energy legislation (Third Energy Package) mandates that each country adopt Gas Network Codes to manage its gas sector. In the case of more mature markets, such as having multiple sellers and buyers, there are gas exchanges with well-established rules on trading different products. Those more advanced rules are sometimes called Gas Market Rules. Another use of the term “Gas Market Rules” is in eastern European and former Soviet countries, which refers to simplified economic and legal rules and just touching lightly on technical matters.

Taking into account the nature and different development stages of natural gas markets, different Network codes and different Market Rules, in different countries, have been developed and applied accordingly. This leads to each European country’s market to be organized and perform in a different fashion. For instance, France is effectively divided into north and south regions, with a less developed hub in the north of the country and two ‘illiquid’ hubs in the south. Furthermore, Germany, has two competing hubs with shared traded volumes (and hence, liquidity) between them.

In Georgia, in compliance with Article 139 of the Draft Energy Law, the Natural Gas Market Rules (hereafter the “Rules”) shall contain rules governing the operation of the gas market.

Article 139, Paragraph (4) of the draft Energy Law, draft dated March 15, 2018 states as follows:

“The Natural Gas Market Rules shall *inter alia* define:

1. Design of the natural gas market in accordance with the natural gas market concept design;
2. Procedures, principles and standards for organization and operation of the natural gas market in line with the applied natural gas market concept design;
3. Method for identification and registration of natural gas market participants;
4. Types and templates of contracts concluded on the natural gas market;
5. Products for trading in the natural gas market;
6. Standards and procedures for keeping records of transactions conducted on the natural gas market;
7. Standards and procedures for establishing and keeping a database for the needs of the natural gas market;
8. Standards and procedures for the application, preparation, verification and change of daily schedules for purchasing and selling of natural gas;
9. Standards and procedures for the procurement of natural gas to cover losses in the natural gas transmission and distribution network in order to ensure continuous, safe and reliable supply of customers with natural gas;
10. Day-ahead natural gas market;
11. Other issues necessary for the organization and operation of the natural gas market.”

The Rules shall regulate the rights and obligations, and relationship between the Transmission System Operator/Independent System Operator (TSO/ISO), the market participants trading in gas under bilateral sale and purchase contracts and (or) on the Natural Gas Exchange, Distribution System Operators (DSOs), and market operators involved in balancing the transmission system. The objective of standard market design for wholesale gas markets is to establish a common market framework that promotes economic efficiency and lower delivered energy costs, maintains system reliability, mitigates significant market power and increases the choices offered to wholesale market participants. All customers should benefit from an efficient competitive wholesale energy market,

whether or not they are in States that have elected to adopt retail access. The Rules and market operation must be fair, well defined and understandable to all market participants.

Recommendations

USAID Energy Program considers that the typical approaches for gas markets used in larger and more advanced European countries is inapposite to the on-the-ground realities in Georgia for the next several years at least. At this point in time, the proposed Gas Network Code for Georgia does a good job of covering many of the technical, organizational, and some economic issues necessary for a well-functioning gas sector.

USAID Energy Program recommends:

- Under the current gas market structure (that is, two at most suppliers, one transportation company, only several distributors) the objectives of the Gas Market Rules, for now, can be well accommodated within the proposed Gas Network Code.
- The Draft Law on Energy should specify that the Gas Market Rules for the future can be developed concurrently (and not before) the gas market design is settled, and Gas Market Rules can be developed after the gas market matures into a more organized natural gas market in Georgia.

PRACTICES AND EXAMPLES IN THE EU

GENERAL CONCEPT OF EUROPEAN NATURAL GAS SPOT MARKETS, NATURAL GAS TRADING HUBS AND EXCHANGES

A vital characteristic of a competitive natural gas market is the existence of a liquid spot market. Essentially, the spot market is the daily market, where the commodity is bought and sold “right now”. Spot markets are results of gas-on-gas competition pricing model demands and are organized at all major exchanges and hubs.

Exchanges are facilities that serve the trading and are accessible via clearing members. Hubs are contractual points where title to natural gas can be transferred from sellers to buyers. Hubs satisfy the risk management of market participant’s portfolios and lead to market suppliers who also participate in the traded market. Hubs allow market participants to acquire natural gas from several independent sources and ship it to several different markets. This eliminates the need to contract natural gas and pipeline capacity all the way from the wellhead to the consumption side. Instead, shippers can combine supply routes across several hubs to diversify supply risks and minimize costs.

As hub operators have increased the scope of hub services from physical transfer of natural gas to storage, processing and trading services, European regulators took steps towards the development of gas-on-gas competition. Directive 2009/73/Energy Community (EC) of the European Parliament and the Council is the heart of the third energy package. This directive also involves adopting common rules for the internal market in natural gas. This Directive establishes common rules for the transmission, distribution, supply and storage of natural gas laying down the rules relating to the organization and functioning of the natural gas sector. The Directive describes how to access the market, the criteria and procedures applicable to the granting of authorizations for transmission, distribution, supply and storage of natural gas and the operation of gas networks.

A hub, in the sense of an actual transportation system, is organized by a system operator which is responsible for matching shippers’ physical transportation demands and ensuring system stability. The ‘balancing’ hubs balance and risk manage the shipper’s portfolios that are usually up to three years in advance, near to maturity, and at delivery. Furthermore, through the TSO/ISO, the balancing hubs physically balance the gas grid, usually on a daily basis. The most mature and successful hubs are both balancing and trading hubs.

An important requisite for a trading hub is the ability for market players to manage volume risk at a competitive cost. For a gas marketer, volume risk can be mitigated either by the use of storage or by having a customer base of a size and mix that matches the supply characteristics. Similarly, a gas consumer manages his volume risk by purchasing flexibility services from his supplier, or by having access to storage himself. The usual metrics for a hub efficiency include:

- Measures of liquidity, such as the churn ratio (re-trading ratio);
- The number of trading parties and the depth of liquidity in the futures curve (the length of time forward that it is possible to trade); and
- Measures of trade concentration, such as the frequency distribution of volumes trades on an individual basis. Another major element of trading hubs is the legal and financial frameworks of the marketplace.

Figure 1 shows the main EU natural gas trading hubs. Hubs allow market participants to acquire natural gas from several independent sources and ship it to several different markets. This eliminates the need to contract natural gas and pipeline capacity all the way from the wellhead to the consumption side. Instead, shippers can combine supply routes across several hubs to diversify supply risks and minimize costs.

Figure 1: Major EU Natural Gas Trading Hubs



As shown in Table 1, there are two physical hubs in Europe: the Central European Gas Hub (CEGH) in Austria and the Zeebrugge hub (ZEE) in Belgium. A virtual hub would offer greater flexibility, because in virtual hubs, the eligible gas for trading is all the gas which has paid a fee for access into the network. Especially when moving towards an entry-exit system – which is required by EU regulations for member states - virtual hubs are more suitable for gas trading.

Table 1: Types of Natural Gas Trading Hubs in Europe as of Year 2015

<i>Virtual hubs; transit type</i>	<i>NBP, United Kingdom TTF, the Netherlands</i>
<i>Virtual hubs: transit type</i>	<i>GPL, Germany PSV, Italy PEG's, France NCG, Germany</i>
<i>Physical hubs: transit type</i>	<i>ZEE, Belgium CEGH, Austria</i>

Access to a particular hub is defined through Hub Services Agreement with the hub operator. The Hub Services Agreement provides all rules for dispatching, matching and allocation services between the Hub Operator and the buyer and the seller, respectively.

Decisions regarding the admission of participants as exchange traders are made by the particular exchange. Exchange admission rules govern the prerequisites for the admission of market participants as exchange traders, the procedures and the prerequisites for admission to and the content of the traders' examination furnishing proof of professional qualification. The admission entitles the exchange trader to trade only the products or group of products he is admitted to and only on the trading platform for which such exchange trader has the required technical knowledge. Evidence of the required specialized knowledge is particularly supplied by passing an examination leading to the qualification of an Exchange Trader Board of Management of the exchange. The conclusion of trades is ensured using the respective trading systems according to the conditions and rules for the registration of trades. The exchange members submit orders and enter into transactions through the electronic trading system (ETS). All Orders and Transactions in the ETS are stored electronically and kept by the exchange in accordance with applicable law. The procedures describe the manual trading service, ranking and matching of orders procedure, trades and transaction clearing. Issued guidelines and procedures are binding upon all participants.

The emergence of hubs promotes the development of gas exchanges. The main European exchanges offering gas contracts are outlined in Table 2. Most of the exchanges offer futures, spot and options contracts.

Table 2: Main European exchanges offering gas contracts

Exchange	Offered trades	Duration of contracts include
<i>ICE</i>	futures & options	Months, Quarters, Seasons, Years Month Ahead to 6 Years forward
<i>ICE-Endex</i>	spot & futures & options	Months Quarters, Seasons, Years
<i>EEX</i>	spot & futures	Months, Quarters, Seasons, Years

		Month Ahead to 3 Years forward
Powernext	spot & futures	Quarters, 3 Seasons, 1 Year
CEGH	spot & futures	Within Day, Day Ahead, Week-End
GME	spot & futures	Within Day, Day Ahead, Week-End

EXAMPLE OF MATURE GAS MARKET: CEGH/VTP TRADING HUB: ORGANIZATION AND RULES

European gas hubs offer a variety of contracts and services. All gas hubs in Europe are ‘balancing’. However, in order to understand the natural gas market in Europe well, it is necessary to analyze each hub individually.

The Austrian Central European Gas Hub (CEGH/VTP) is vast and is owned and operated by Gas Connect Austria. Approximately one third of all Russian gas supplies to Western Europe come through CEGH for onward transportation to Germany, Italy, Slovenia and Hungary, as well as to supply the national market. The CEGH hub started trading in 2005 and in fact offered trading at six locations across Austria of which Baumgarten was by far the most important and the one that registered the most trades.

The Baumgarten gas hub came online in 1959 and was well placed geographically at the center of Europe and hoped to form part of a regional hub for Central Europe. However, following the implementation of the Austrian Gas Act on 1st January 2013, a virtual trading point was created, the VTP for the Eastern Market Area. (Austria’s two other Market Areas are independent of each other and of the main Eastern Area and are each linked to and supplied by the German NetConnect Germany NCG grid). The VTP is showing signs of improvement, albeit slowly and most forward trading is the result of spreads with the TTF, NCG or PSV markets. Austria is also in discussions with two of its neighbors, Czech Republic and Slovakia, regarding the development of a Regional hub.

PEGAS is the central gas trading platform of EEX Group operated by Powernext, providing its members with access to all contracts in the Austrian, Belgian, Czech, Danish, Dutch, French, German, Italian and UK market areas. PEGAS covers spot and derivatives contracts for the major European gas hubs as well as trading in location spread products between these market areas. This setup enables market harmonization and forms the preferred pan European natural gas market.

CEGH functions as a regional balancing platform by offering trading activities and services for different markets including:

- CEGH Over-the-Counter (OTC) market (offering Title Transfer Service, Gas Auctions, Dispatching Service, Nomination Service, and Web Service);
- PEGAS CEGH Gas Exchange products with delivery at the Austrian VTP offered via the pan-European PEGAS platform (offering Spot Market and Future Market); and
- PEGAS CEGH Czech Gas Exchange with delivery at the Czech VTP in cooperation with PEGAS (Spot Market and Future Market).

Furthermore, the products under the Spot Market include: within-day, day-head weekend contracts. The Futures Market is defined through: the first three Front Months, four Front Quarters, three Front Seasons and two Front Years is offered. The CEGH platform is called CEGH REMIT platform and is a project supported and endorsed by the Austrian energy regulator “Energie-Control Austria (E-Control)” and incorporating the latest ACER requirements. Note that the energy regulator provides input to the Hub Operator on hub issues as any other stakeholder but does not regulate hub activities.

The CEGH market is governed by the Market Rules and regulations issued by Powernext.

The Market Rules outline includes:

- Organization and Operation of the market;
- Market Segments with special requirements;
- Procedures and contractual relations;
- Market participants;
- Tradable contracts;
- Member status and access requirements;
- Access to Powernext derivatives and identification;
- Authorized registered brokers;

- Rules of conduct;
- Sanctions.

CEGH publishes and regularly updates statistical values about the CEGH / VTP and CEGH / Gas exchange markets. The publication of market statistics follows the recommendations for measures of liquidity according to European Federation of Energy Traders (EFET) guidelines.

GAP ANALYSIS BETWEEN MARKET RULES AS INDICATED BY THE PROPOSED ENERGY LAW AND THE ADOPTED GAS NETWORK CODE

The table below outlines the main Market Rules areas as outlined in the Draft Energy Law and the provisions within the Network Code. The third column of the table provides comments on the main areas and their relation to the various natural gas markets.

Table 3:

Market Rules Area within the Draft Energy Law Requirements	Natural Gas Grid Code Articles covering the Market Rules Area	Identified Gaps / Comments
Design of the natural gas market in accordance with the natural gas market concept design	Balancing market	No gaps.
Procedures, principles and standards for organization and operation of the natural gas market in line with the applied natural gas market concept design	5.1 Programming procedure	The current draft of the Natural Gas Market Concept design is broader and includes: a Balancing Market, a DAM and a market under the Gas Release Program. Usually, any Market Rules should reflect the currently existing natural gas market
Method for identification and registration of natural gas market participants	Section 2.2 Registry of Users	Method for identification and registration of market participants can be considered within an organized market, i.e. the existence of a spot market at a hub.
Types and templates of contracts concluded on the natural gas market	Section 2.3 Transportation contract Article 10: Agreements with Connected Operators Article 49: Balancing contract and Daily imbalance price Article 103: Existing contracts	The Network Code describes; Existing contracts and Agreements. Types and templates of contracts can also be referred to an organized natural gas market such as: Within Day, Day-ahead, Week-end, etc.
Products for trading in the natural gas market	None.	Products for trading are usually linked to natural gas hub/exchange such as: spot, future, options.
Standards and procedures for keeping records of transactions conducted on the natural gas market	Section 16.1 <ul style="list-style-type: none"> ▪ The TSO will operate an Information System (IS), available at all moments (24 hours/day and all year-long). ▪ The TSO's IS shall allow safe recording of all relevant data for metering and billing purposes. Section 16.2 <ul style="list-style-type: none"> ▪ The TSO must develop and maintain an Electronic Information System and provide access to the system users and any other third parties with legitimate interest. The IS will be accessible to users for the necessary operations (bookings and nominations, etc.)	The Network Code defines Standards & Procedures related to data system in the balancing market. In an organized market, standards & procedures are defined within the rules of the hub.
Standards and procedures for establishing and keeping a database for the needs of the natural gas market	Article 5: Exchange of Information Article 4: Confidentiality Chapter XVIII: Electronic information system	Such standards & procedures apply to any Natural gas market such as: balancing or spot market
Standards and procedures for the application, preparation, verification and change of daily schedules for purchasing and selling of natural gas	Section 5. Nomination and re-nomination procedures Article 22: Monthly planning Article 27: Daily re-nominations	Such standards & procedures are part of The Rules at a hub/exchange.
Standards and procedures for the procurement of natural gas to cover losses in the natural gas transmission and distribution network in order to ensure continuous, safe and reliable supply of customers with natural gas	Article 50: Calculation of remaining losses Article 51: Calculation of Network Users Daily Imbalances Article 53: Calculation of Imbalances charges Article 60: Obligations of the Operator for safe and interrupted gas supply Article 61: Response to incidents Article 62: Emergency situations	Already developed within the Network Code.

Day-ahead natural gas market	None	Rules at a hub/exchange will also cover the so-called "day-ahead" market
Other issues necessary for the organization and operation of the natural gas market	Article 1: Definition of Transmission System Entry and Exit point Article 7: Basic services Article 8: Ancillary Services Chapter 9: Natural gas withdrawal from Transmission system Chapter 10: Natural gas quantities allocation at entry and exit points Chapter XVIII: Electronic information system	As considered

CONCLUSIONS

1. Based on the provided gap analysis between the draft Energy Law and the Network Code, USAID Energy Program gas team concludes that most of the main Market Rules areas as defined within the Draft Energy Law are referred to rules of an organized natural gas market such as spot market or to a so-called “DAM”.
2. It is worth mentioning that according to best international practices related to natural gas markets development, as described above, the so-called DAM market is part of an organized spot market rather than just a single defined market-type.
3. As per best international practices related to natural gas markets development, any Natural Gas Market Rules should be defined and developed by the corresponding exchange (like Powernext for CEGH) where the transactions are cleared.
4. The draft Law on Energy mandates that Georgian National Energy and Water Supply Regulatory Commission (GNERC) adopt Gas Market Rules. If using European practice as a guide, if a gas hub model is developed in Georgia, the hub operator Board of Management will be responsible for the adoption of Hub rules and procedures and traders using the hub will be certified by the hub Board of Management.
5. A set up of a natural gas spot market in Georgia will require:
 - Establish Balancing Market;
 - Establish Natural Gas Market Operator;
 - Identify main products to be traded within the organized market;
 - Identify the trading platform to be used;
 - Liquidity and established competition within the natural gas market.

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