Short Term Gas Demand Forecasting

Case study by Albania

Albanian Energy Regulatory Authority
ERE

ERRA Gaseous Fuels Markets and Economic Regulation Committee (GF COM) Meeting
October 28-29, 2024 | 3rd Meeting | Physical in Tirana, Albania

PROGRESS IN LEGISLATIVE ALIGNMENT – NEW POWER SECTOR LAW AND GAS SECTOR LAW

- In 30.04.2015 the Albanian Parliament approved the new Law No.43/2015 "On Power Sector" fully in line with the directive 2009/72/EC of the European Parliament
- In 23.09.2015 the Law No 102/2015 "On natural gas" was adopted by the Albanian Parliament fully approximated with the Directive 2009/73/EC of the European Parliament
- The law introduced many new concepts and is far-reaching and predictive allowing implementation of important projects such as the Trans-Adriatic Pipeline, which is now in operation.

MAIN OBJECTIVES OF THE NEW GAS SECTOR LAW 102/2015

- Security of Supply
- Preparation for Creation of a functional and competitive market
- Protection of vulnerable customers
- Development of Transmission and Distribution network
- Liberalization of the Market
- Approval of codes (Transport, distribution, tariffs metering)
- Approval regulation and methodology for LNG and Storage(for Albania and regions)

MAIN OBJECTIVES OF THE NEW GAS SECTOR LAW 102/2015

- Customers may choose their supplier
- Universal Supplier concept
- Public Service Obligation
- Strengthen the Regulatory Authority in monitoring issues
- Independence of the Regulator
- TSO-DSO (combination operator) certification, Licensing

PUBLIC SERVICE OBLIGATION

- The Council of Ministers, defines the rules on imposing the Public Service Obligation
- Based on these rules and taking in consideration the general interest of the Country, ERE may decide to impose to the licensee in the production, transmission, distribution and Universal Supplier, the Public Service Obligation
- Following the entrance into force of CM decision, ERE approved the rules on Universal Service Obligation

ESTABLISHMENT OF THE TRANSMISSION AND DISTRIBUTION ALBGAS COMPANY

- The Law No 102/2015 of 23.09.2015 “On natural gas” stipulates the unbundling of TSO company (Transmission System Operator)
- Albgas company will be split in “Combination Operator” which will own the physical assets and “Market Operator” which will manage the relationships of all participant in the gas market

ORGANIZATIONAL AND INSTITUTIONAL ASSESSMENT

- After the adaption of the new Gas Law, a set of secondary acts needs to be developed by the institutions
- Focus should be put on further development of Albagas as a TSO and DSO(s). Combined Operator.
- TAP has agreement withe Albgas for the maintenance agreements of the TAP pipeline in the territory of Albania
- Albania Gas Services (AGS), the TAP maintenance company, created by Albgas and SNAM.
- TAP is helping Albgas to build their human capacities
- We have a department for gas to ERE, we are working on their qualification

Regulator Role in Gas Forecasting

- What is the role of the regulator in the gas forecasting?

The gas forecast is made by the relevant institution and ministry, the regulatory body determines the prices and at the same time monitors it.

- Does the regulator forecast the gas consumption or its done by the TSO/DSO?

If the TSO/DSO does it, does the regulator approve it at the end? Please elaborate.

The customer forecast is made by the OST/OSSH company, ERE approves it

Purpose and Objectives of the Gas Demand Forecasting

- What are the main goals of the gas demand forecasting? What timeframes are the focus (e.g., annual, winter)?

The time frame for forecasting gas demand becomes annual. In fact, we have small amounts of gas in our country, the gas market has not yet been opened.

- Do you use forecasted gas consumption for setting up tariffs on TSO or DSO level?

ERE sets fees in accordance with the Fee Code approved by itself.

Segmented Gas Demand Forecasting

- When gas forecast are made, are they segmented by user types (e.g., DSO, industrial users, power plants, residential) to tailor models to each sector's unique consumption patterns?
- For instance, residential demand may focus on heating, while industrial demand uses specific consumption models for high-load industries, like steel and chemical production

In the gas forecast, all types of gas users are taken into account; industrial, thermal, residential, etc. users.

Inputs When Forecasting the Gas Demand

- What are the inputs that are used when making the gas demand forecast? (historical data, whether forecast, price forecasts, consumers survey, contracts signed, LNG, storage etc.)

In the forecast made for the demand for gas, all the elements are taken, such as; contracts, customers, historical data, etc.Years ago in Albania, 1 bcm/y was produced and consumed per year, this is our experience.

- Are there contingency scenarios for unexpected demand surges?

We have a natural gas master plan, priority projects and a natural gas infrastructure master plan. Financed from EWBJF by a contribution from the EU IPA multi-beneficiary, program for Albania, Bosnia Herzegovina, Kosovo, Macedonia and Serbia.

The LNG import terminal in Vlora

- The LNG import terminal in Vlora shall serve to host dedicated natural gas loading and regasification vessels. The terminal shall be supplied with LNG through Floating Storage Regasification Units (FSRU).
- The FSRU has been booked to dock at this terminal and shall supply the terminal with up to 5 bcm/year. Albgaz company intends to invest in this infrastructural work in a certain percentage of the quotas of the work
- The total investment value for the terminal is expected to be around EUR 128 million

IONIAN ADRIATIC PIPELINE (IAP) section: Fier-Kashar

- The Ionian-Adriatic pipeline, which will be connected to TAP at the connecting node in Fier, will cross about 170 km in the Albanian territory, to continue further north through Montenegro, Bosnia-Herzegovina. and end in Croatia where it connects to the Croatian broadcasting system, Plinacro. The capacity will be designed to transmit up to 5 bcm. The technical parameters are: 32" for the diameter and 75-85 bar for the pressure.
- The shareholders of this pipeline will be the 4 relevant transmission operators of each country where the asset will pass, with equal ownership quotas of 25%.
- In the territory of the Republic of Albania, the Fier-Kashar section will begin to be designed, with a length of 84 km, and an investment value of 150 million EUR. It is supposed to start in 2025

IAP Section: Kashar (Tirana)-Montenegro

- This section covers a length of about 86 km, from Kashari to the border point with Montenegro. The expected value of the investment is EUR 165 million. The Feasibility Study has been carried out. Pre-FEED and FEED are expected to be carried out in 2025-26, to conclude with the commissioning of the asset in 2030.

Dumre underground gas storage project

- Another important project related to the gas infrastructure is the construction of a natural gas storage site in the Dumre area, which is planned to be realized in two phases, based on the cooperation between Albgaz and SNAM, which is planned to starts with the creation of a structure divided into two storage sites with a combined capacity of 230 m3 of gas, while the second phase envisages the expansion of this structure up to the capacity of 800 m3, thus giving it a regional dimension.

Project Interconnection of Albania with RMV

- An important project is the connection between the transmission systems of Albania and North Macedonia. With a length of about 60 km, this investment by Albgaz would amount to EUR 46 million.
- The implementation period will last from 2025-28.

Project distribution Korça

- Cost of project investment is estimated at approximately 20.3 milion euro.
- This is a distrubutions project about the solar heater and consumption industry.
- This project is in collaboration of Albgas with SOCAR company Azerbajdian.
- The project is ready for launch.

Mathematical Models for Forecasting

Are there any mathematical models used to do or help forecasts (official or unofficial) (for example: linear regression, multilinear regression, affine linear heat rate models for sectors like power generation etc.)?

So far we have not used any mathematical model for forecasting gas requirements.

Challenges and Best Practices in Gas Demand Forecasting

Challenges

- What are the main obstacles to accurate forecasting (for example: data quality, unpredictability of weather)?

We still haven't opened the gas market. At the moment we have customers, but the transmission and distribution system is missing, despite the fact that we have the projects ready.

- How do TSOs, DSOs, and other stakeholders address these challenges?

They are waiting for the relevant decisions from the policy makers.

Best Practices

- What are the best practices that can enhance the reliability of gas demand forecasting?
- **The answers to this questionnaire are best practices to increase the reliability of gas forecasting.**

THANK YOU FOR YOUR ATTENTION!

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