ABSTRACT

Romania, through its Agency for Foreign Development (The Romanian Agency for International Development Cooperation), is looking to provide assistance to the Republic of Georgia to improve its energy security.

Energy Security is the uninterrupted availability of energy sources at an affordable price.

Long-term energy security mainly deals with timely investments to supply energy in line with economic developments and sustainable environmental needs.

Short-term energy security focuses on the ability of the energy system to react promptly to sudden changes within the supply-demand balance. The concern for physical unavailability of supply is more prevalent in energy markets where transmission systems must be kept in constant balance.

To this aim, The Romanian Agency for International Development Cooperation (RoAid) has retained Ridgeline Industrial to carry out a short review of the Georgian energy sector. The intention is to assist the various Georgian energy sector stakeholders in their development, and to propose next steps for more detailed studies.

Ridgeline Industrial accompanied a Georgian delegation during their visit to Romania, meeting with various Romanian companies and institutions such as:

- **The Romanian Ministry of Energy**
- **ANRE** - the Romanian gas and electricity regulator
- **Transelectrica** - the national transmission operator and national dispatcher
- **OPCOM** - the Romanian gas and electricity system operator
- **Electrica SA** - a Romanian regional electricity distribution and supply company
- **CEZ Romania** - a Romanian regional electricity distribution and supply company, owned by CEZ, the Czech national utility
- **The CEZ Wind Farm** - the 600 MW CEZ-owned wind farm on the shores of the Black Sea
- **The Romanian Commodities Exchange**

The visit provided an opportunity to discuss in detail the duties and experience of the various Romanian entities in the overall energy scheme, as well as interest from the Georgian part in the development of a viable renewable support scheme, details of the operational management of a large wind farm and relationship with the regulatory authorities, market monitoring methodology, specific software and transparent trading platforms for gas and electricity.

Further to this electricity sector related visit, a gas sector delegation from Georgia visited at the end of November 2018, during which fruitful discussions took place with the Romanian Ministry of Energy, ANRE, the gas regulator, as well as Transgaz (the Romanian high pressure gas pipeline operator) and Romgaz, the Romanian state-owned natural gas producer. Of particular note was the discussion with the Ministry of Energy around the AGRI Project (described in more detail in the "Georgia as energy hub and regional cooperation in the South Caucasus" chapter).

This document presents a short review of the Georgian energy system with selected figures highlighting the level of its electricity transmission grid and potential for exports given the good interconnection levels and competitive power generation potential.

Georgia has an opportunity to consolidate its position not only as an energy hub for both the transit of hydrocarbons from the Caucasus and Caspian Sea region, but also as a transmission nexus derived from its reasonably well developed electrical grid and the competitive advantage in the generation of electricity from renewable sources.

A promising direction of further development is wind resource, after the promising start of its first 20 MW Qartli 1 wind farm shows, with it having a 2017 capacity factor of 48%. We are looking into the scope of a bankable feasibility study, which would help advance the next and larger phase of developing the wind farm.

A review of renewable support schemes around the world is presented, feed-in-tariffs, auctions, a combination of the two, and green certificates. It can be seen that a one-size-fits-all approach doesn't always work, and depending on local characteristics, some measures are more sustainable than others while encouraging the commercial development of the sector.

Selected details of the financial model required for the development and construction of any energy project are presented, as well as the Levelized Cost of Electricity (LCOE) calculations and principles.

In conclusion we present suggestions for the next concrete steps of assistance to Georgian energy sector stakeholders:

- **A bankable feasibility study for the expansion of Quartli wind farm by 100-150 MW - assistance in writing specific renewable energy support legislation could also be included as part of the scope of the study**
- **The implementation of a platform for transparent market monitoring and trading, both for natural gas and electricity**
- **A study of the potential for flexible gas turbines to balance the grid if larger capacities of wind power will be commissioned in the coming years**
- **A fresh view of the AGRI project, with focus on both financial and technical feasibility, as well as related security challenges in the Black Sea**

As an illustration of good practices, the scope and importance of regional cooperation in Central and Eastern Europe for energy markets, given existing energy security challenges, are analyzed in various November 2018 policy papers annexed to this document.