ECRA’s Regulatory Approach to Maintaining Security of Supply

Fayez Ghaith Al Jabri, Mohammed Al Ghwazi, Shareef Al-Barrak
Electricity & Co-Generation Regulatory Authority, Saudi Arabia

Security of electricity supply is a priority for Saudi Electricity and Co-Generation Regulatory Authority (ECRA). This paper sets out our approach to maintaining security of supply in response to significant demand growth and continuity of supply as shown below.

A. The Electricity Industry Restructuring Plan (EIRP)
The development of open, competitive markets has the potential to deliver security of supply benefits for KSA. It opens up possibilities for greater supply diversification, mitigating local supply risks, allows flexible trading within and between neighboring countries.

B. Planning and Standards
To monitor Security of Supply, several documents have recently been developed as follows.

i. Generation Expansion Planning Criteria
ii. Distribution Security of Supply
iii. Transmission and Distribution Capability Statements
iv. Renewable Generation
   a. Small scale solar PV regulations
   b. Grid and distribution codes amendments to enable renewable generation

C. Key Performance Indicators

ECRA is confident that the current arrangements are sufficient to:
- Effectively monitor the security of power system
- Enhance security of supply.
ECRA will continue to assess the appropriateness of the current framework and identify where any improvements can be made to the existing documents.

Reference Materials
- ECRA’s KPIs regulatory Framework, Distribution security Standards, Transmission Planning Criteria, Grid and Distribution codes

Keywords
- Security of supply, Continuity, Renewable, Restructuring, Planning and Standards

In case of interest, please contact us at:
fgjabri@ecra.gov.sa, smbarrak@ecra.gov.sa, mmghawazi@ecra.gov.sa
European Directives prescribe that electricity consumers be informed about the source of the electricity they are supplied with ("disclosure information"). It is impossible to physically track electrons, so once electricity is injected into the grid it is impossible to distinguish between electrons from different energy sources. To substantiate claims that electricity supplied/used is from renewable sources, a reliable tracking instrument is needed: Guarantees of Origin (GOs).

- AIB (Association of Issuing Bodies) is the voluntary not for profit umbrella of issuing bodies of GOs.
- CEER (Council of European Energy Regulators) is the voluntary not for profit umbrella of energy regulators, who oversee disclosure information.
- The RE-DISS projects ended in 2015 meaning the end of a governance platform involving many relevant stakeholders, representing the different segments of the process chain from electricity producer to customer.

Guarantees of Origin – The principles

From AIB to CEER and ERRA

- CEER Advice on Customer Information on Sources of Electricity, Ref: C14-CEM-70-08, March 2015
- Klirschefski, Van Evercooren, Moody: Realising the Potential of Guarantees of Origin to Empower Consumers. ICER Chronicle Edition 4

Keywords
- Regulation, energy transition, consumer empowerment, consumer information, renewables, trust, energy demand

In case of interest, please contact us at:
Phil Moody, Secretary General AIB, secgen@aib-net.org, +44 (0) 1494 681183
Dirk Van Evercooren, President AIB, dirk.vanevercooren@aib-net.org, +32 (0) 2 5531360
Energy Trends and Perspectives in South Caucasus Region
Sopio Khozrevanidze, Lia Gvazava
Georgian National Energy and Water Supply Regulatory Commission

- Global energy demand grew by 2.1% in 2017 (IEA).
- The growing global demand for energy has raised challenges for the global community. There is the central challenge for the countries to develop a common domestic and foreign energy policy, to achieve a sustainable energy system and to ensure secure and affordable energy supplies.

The research uses common analytical approach for the three South Caucasus countries
- First, the key stakeholders in the energy sector (state and non-state; local, national and international) of each country are mapped, and
- Second, analysis of narratives on renewable energy in media articles, expert discussions and policy documents are analysed.

Based on the high importance of the research topic authors use historical and logical generalization methods of research as well.

The research is largely exploratory and aims to offer a new angle in the studies and policy debates on energy sector in South Caucasus. In this sense, it presents a first sketch of how future of energy is perceived in the South Caucasus and what are the implications of these perceptions for regional energy policy.

- Incorporating experience and clearly understanding the needs of the Turkish and other Black Sea countries’ markets are essential for the development of the energy sector in South Caucasus.
- To ensure secure and affordable energy supplies in South Caucasus countries energy diversification has a huge importance.
- Establishment of energy corridors has a potential to strengthen its role in implementation of East-West and North-South transit projects. Effective utilization of its geopolitical location, will contribute to South Caucasus countries’ energy security and economic development.

South Caucasus countries are rich with renewable energy sources, including wind, solar, bio and hydro energy. The countries of this region have made tremendous achievements in the development of this sector and at the same time these countries are working on the development of wider energy corridors to export natural and renewable energy resources.

- Establishment of new energy corridors, and the possibility for Turkey to become a regional energy hub, can mitigate external pressure on energy security in the region.
- To protect critical energy infrastructure, The governments of Armenia, Azerbaijan, and Georgia should accelerate the adoption and implementation of relevant technical regulations, guidelines, standards and recommendations for harmonization of legislation with the EU within existing cooperation programmes and regulations.

Reference Materials
- https://gep.mckinseyenergyinsights.com/

Keywords
Energy Security, diversification, infrastructure, EU legislation

In case of interest, please contact us at:
s.khozrevanidze@gnerc.org; l.gvazava@gnerc.org

Oleg Barkin, Vladislav Berezovsky
Association “NP Market Council”

Association «NP Market Council»:
- Unites participants of the wholesale market
- Arranges the commercial activities of the wholesale market (The Association owns the Trade System Administrator & the Financial Settlement Center)
- Develops market rules
- Takes part in the regulation of the power industry
- The Supervisory Board consists of government, generators, resellers and consumers representatives

Power Industry 4.0
A regulator has to adopt different technologies according to their maturity level.
In the first levels, we select and assess useful technologies.
In the second step, the technologies are piloted to show their efficiency and competitiveness.
The mature technologies need actions that support their promotion in the energy market.

The role of the regulator:
- Developing of standards
- Expert assessment of legislation changes
- Resist cross subsidization

Demand Response in The Russian Wholesale Electricity Market

For example, Demand Response technologies decrease value of peaking generation units and prices in the Day-Ahead market. Since 2016 there has been DR market mechanism for wholesale consumers that was created by the System Operator and the Trade System Administrator. Since 2018 DR mechanism for retail consumers is going to be piloted.

Reference Materials
- http://www.en.np-sr.ru
- https://asi.ru/eng/nti/

Keywords
energy market, demand response, regulation, industry 4.0
The integration of electricity markets creates new challenges to the regulatory authorities in their commitment to guarantee security of supply at affordable prices. Even at a national level, designing policies for electricity markets is an extremely complex task; but this is exacerbated in the case of market coupling, since different policies may be applied at the two ends of an interconnector.

In our opinion, in the light of the globalization and liberalization the national regulatory authorities (“NRAs”) are losing the justification of their original reason for the establishment. NRAs are becoming more and more passive among the other players on the energy market in the European Union. This type of policy will in the future pose a threat for households and small enterprises.

Do we need to change our energy mix?
Energy mix has fundamental role in the energy security of countries and especially for security of supply:
• Consumers expect that they will receive energy products regularly for stable prices.
• Today we obtain energy mostly from fossil fuels, but under pressure of reducing CO2 in the air we try to change our energy mix and we start to use renewable sources.
• Therefore, countries try to motivate people to produce energy from renewable sources through feed-in tariffs especially. It causes high price of energy for ordinary consumers.

The main conclusion of the study is that today’s renewable energy technologies are not enough to replace the fossil fuels. They can only serve as a supplement but not as the main source of electricity in each country. But we do not avoid a discussion about looking for new energy resources and improving the investments in renewable sources.

The independent regulatory authority in terms of transitional energy markets
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Reference Materials
• EU Energy Markets in 2014
• Look at „Pros and cons of different energy sources“
• Financing Renewables

Keywords
energy mix; renewable energy; electricity market; market coupling; transmission capacity; independent regulatory authority

In case of interest, please contact us at: pavol.chropovksy@urso.gov.sk; marian.parkanyi@urso.gov.sk