The role of regulators for energy security

Security of supply debated at the global level at the 5th World Forum of Energy Regulators: the latest Report of the ICER-WG1 Chairman and former Secretary General of the Italian Regulatory Authority for Electricity and Gas

Carlo Crea

The security of energy supply has been discussed during the 5th World Forum of Energy Regulators (WFER V), held this year in Quebec City, Canada.

As Chairman, within ICER-International Confederation of Energy Regulators, of the VWG1 dedicated to Security of Supply Issues, I had the opportunity to present the report *Role of Energy Regulators in guaranteeing Reliability and Security of Supply - National, Regional and Global Dimensions*, dealing with the role of energy regulation in addressing security of supply issues with a particular focus on the promotion of investments.

This report is the outcome of a 3-year project carried out with the participation of worldwide Regional and National Regulatory Authorities and coordinated by MEDREG, the Association of Mediterranean Regulators for Electricity and Gas.

The Report also mirrors the precious inputs obtained through the far-reaching contacts and interaction which ICER established with some of the world's most influential financial and multilateral institutions involved in the sector: EBRD, Energy Charter, IDB, IEA, UNECE, VLPGO, World Bank.

The Report highlights in 6 chapters and 13 annexes the diverse energy resource endowments, energy supply policies and regulatory framework of the countries members of the eleven Regional Regulatory Authorities (RRAs), which participated in the activities of VWG-1. Many of these countries are already, or are becoming, highly dependent on external energy supplies.

The principal findings in the energy structure of RRAs as reported in the Report regard:

a) the large disparities in the size of RRA energy supplies;
b) the presence of dominant countries in most RRAs;
c) major differences in the structure of the RRA energy systems;
d) large variation in import dependence of the RRAs;
e) huge diversities in the energy systems of the countries within each RRA.

In that respect the report underlines how the weight of individual RRAs in the global energy system will change significantly over the coming two decades: the strongest increase in energy consumption will concern the regions under SAFIR (South Asia Forum for Infrastructure Regulation), MEDREG (Mediterranean Association of Energy Regulators) not members of-CEER (Council of European Energy Regulators), AFUR (African Forum for Utility Regulators) & RERA (Regional Electricity Regulators Association of Southern Africa) and EAPIRF (East Asia and Pacific Infrastructure Regulatory Forum), whilst CEER and NARUC (the USA national association representing the State Public Service Commissioners) will maintain their current levels of consumption.

In the chapter *Evaluation of the Risks for Security of Supply,* the Report reveals that no region as a whole in the world appears to be under irremediably seve-

Carlo Crea
Former Secretary General of the Italian Regulatory Authority for Electricity and Gas, CEER Vice-President and President ICER Virtual Working Group - Security of supply

International Confederation of Energy Regulators (ICER)

The International Confederation of Energy Regulators (ICER) is a voluntary framework for cooperation between Regional Associations of energy regulators from around the globe. Its aim is to improve public and policy-maker awareness and understanding of energy regulation and its role in addressing a wide spectrum of socio-economic, environmental and market issues.
Members of ICER are: ARIAE (Latin America), AFUR and RERA (Africa), CAMPUT (Canada), CEER (EU), EAPIRF (East Asia Pacific), ERRA (from Mongolia to Saudi Arabia), MEDREG (Mediterranean countries), NARUC (USA), OOCUR (Caribbean countries), SAFIR (Asia) and the regulators of Australia (AEMC) and China.
Italy is represented by AEEG, member of MEDREG and CEER.

re risk of supply interruptions, though a number of countries in certain regions run high levels of risk of either technical or geopolitical nature.
Risks have been evaluated considering two classical indicators:

- *the Herfindhal - Hirschman index (HHI),* which measures the degree of diversification of imported energy sources:
- *the Risky External Energy Supply (REES) index* which, in addition, takes into account the political and governance risks of fuel exporting countries.

However, these indexes take no account of the importance of a given fuel in a country's energy system. For this reason the assessment was based on two further indexes:

- HHIa and REESa, which take into account the share of a given fuel in total primary energy consumption;

and

- HHIb and REESb, which take into account the share of net imports of the fuel in total primary energy consumption.

The Report proposes also an *Overview of Energy Supply Emergencies.* Though the vast majority of energy supply interruptions are caused by natural events and human error, seemingly a significant number can be attributed to poor or inadequate regulatory oversight and regulation of energy supplies, resulting in inadequate investments in capacity expansion, network development and maintenance.
One of the results of the Report shows, indeed, that energy infrastructure development on a regional scale can offer substantial cost reductions through economies-of-scale in investments and synergies in the use of shared resources.
Moreover, the energy sector reform is indispensable to attract private investments, without which many regional projects are difficult to finance.
Therefore, independent regulatory authorities are necessary for creating an effective regulatory environment which guarantees:

- the definition and application of adequate regulations,
- the enforcement of standard technical rules,
- capabilities for monitoring anti-competitive behaviour,
- effective communication and adequate dispute resolution mechanisms.

A significant conclusion to be drawn from the Report is the importance of regional integration as a means of increasing security of supply. The most important message learned at all stages of development of regional energy infrastructure projects is the need to accompany capacity expansion and cross-border trade with adequate forms of sector restructuring, institutional and regulatory reform.
The specific competences of energy regulators have been analysed on the basis of the results of a dedicated survey about Security of Supply (SoS) submitted to regulators from all over the world. A primary aim of the Survey was to examine the energy regulators' perception of three key SoS issues:

1. The risks for security of supply
2. The management of supply emergencies
3. Medium- and long-term preventive measures.

Regarding the first point (risks for SoS), the overall perception of regulators is that low levels of risk to SoS, current and future, exist for all fuels.
Regarding the second point (management of supply emergencies), the survey results suggest that selec-

tive rationing is the measure used more often to address supply interruptions in practically all RRAs.
As for the third point (preventive measures), three measures emerged as the most chosen:

- the promotion of investments in new infrastructure projects
- efficient operation of energy markets
- reducing demand through energy conservation and efficiency.

The Report examines the topic of *Regulatory Governance in a Global Setting.* As a matter of fact, in an increasingly global world regulatory best practices gain importance, not only in the development of cross border projects but also when conceiving import/export projects for the transport of energy over large distances crossing multiple borders.
In this respect, the Report highlights that:
Good regulation means:

- to ensure investor participation and reasonable Rate-of-Return
- to protect consumers
- to favour achievement of policy objectives.

Bad regulation implies:

- failure to adopt adequate tariff methodologies and quality standards
- setting inappropriate benchmarks causing divergences between costs and prices.

However, the *Regulator is almost powerless* when there are:

- poorly designed market structures
- inconsistent government policies
- scarce independence from governments
- macroeconomic crisis conditions.

As a conclusion it could be affirmed that Regional Regulatory Associations can play an important role in the achievement of Security of Supply in the world arena, by encouraging their member National Regulatory Authorities to attain greater compatibility in the regulation of energy in their respective countries.
The World forum of Energy Regulators appreciated the following outcomes of the Report, namely:

- energy sector reform is needed to enhance market efficiency: indispensable to attract private investments;
- regulatory independence is a key prerequisite to enable market reform;
- harmonisation of rules on a regional scale must be achieved to facilitate cross border projects;
- cross-border coordination between regulatory bodies should be established to achieve effective regulation of projects of regional scope;
- best practice exchange is essential, particularly in the development of cross-border projects.

On the basis of the analysis and of the discussions on the security of supply issue, the World Forum of Energy Regulators has been the appropriate occasion to present some basic recommendations for Governments, particularly asked to: unbundle generation/transmission/distribution/supply functions; provide guarantees on projects development; simplify and speed up authorisation procedures; recognise the role of energy regulation as distinct from government energy and social policy; endow regulators with stable responsibilities and an appropriate level of independence and autonomy.
Finally, the Report addresses also some recommendations to energy Regulators, in particular: clearly recognising the impact of their decisions on energy security; ensuring that their decisions promote investments in infrastructure; working towards the harmonisation of rules with those of neighbouring countries; improving the monitoring of quality of supply and reliability standards and, last but not least, supporting domestic energy resource development and end-use efficiency.
After the presentation, during the session of WFER V, chaired by Mrs Lise Duquette, President of CAMPUT (Energy Regulators and Utilities of Canada), an in-depth discussion by the participants followed: they have appreciated the indications of the Report, particularly on how regulators can help to ensure security of supply by encouraging investment in infrastructure while protecting the public interest as well as debating on the financial risks and challenges for developing markets, the renewed interest in long-term contracts terms and specific issues related to cross-border projects in regulatory oversight, funding and cost allocation.
The discussion on this crucial issue will continue to be part of the public debate involving all the stakeholders and decision makers worldwide.