



ENERGY REGULATORS REGIONAL ASSOCIATION

ACTIVITY REPORT

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2017

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CHAIRMAN letter

WELCOME TO ERRA'S 2017 Activity Report!



I am pleased to introduce this report which describes ERRA's journey through 2017.

The industry in which we operate is being tested and challenged as never before. We are facing large scale shifts in local, regional and global energy systems that make the task and work of energy regulators ever more complex and challenging. Advancements in decentralized distribution-embedded generation, an increased deployment of intermittent renewable energy sources and developments in the increasingly-important topic of cyber security are sparking intense discussion and continuing to reshape regulatory policy. ERRA is pleased to have served as a discussion hub to navigate through these demanding times.

Since the following report describes our 2017 activities and projects in full, I would like to point out only three outstanding episodes that relate more to ERRA's increasing institutional capacities.

In November 2017 we celebrated a rather symbolic milestone in the history of ERRA, the opening of ERRA's Office in Budapest, Hungary. I am very pleased that ERRA's aim to be a reliable platform for the exchange of information, best practices and knowledge of energy regulators is now supported by enabling environment and better facilities. Any organisation, association must move with times and the new Office certainly gives a new space for commitment and inspiration.

Second, I would like to welcome the establishment of ERRA's Strategic Advisory Board which body provides valuable strategic perspectives to our organisation. I also acknowledge the much respected contribution of dr. Gábor Szörényi in his roles as ERRA's Chairman and General Secretary. Gábor retired from ERRA in April 2017 and I would like to thank him for his services on behalf of the entire Association.

Finally, I would like to congratulate all our members, association management and staff for the many outstanding projects and the excellent performance in 2017!

A handwritten signature in blue ink, appearing to read 'Mart Ots'.

Mart Ots
Chairman
ERRA

CHAIRMAN letter

مرحباً بكم في تقرير نشاط جمعية منظمي الطاقة لعام 2017

مرحباً بكم في تقرير نشاط جمعية منظمي الطاقة لعام 2017
يسرني أن أعرض لكم هذا التقرير الذي يوضح رحلة الجمعية في عام 2017.
يمر القطاع الذي نعمل فيه جميعاً باختبارات وتحديات غير مسبقة، إذ نواجه تحولات واسعة النطاق في نظم الطاقة المحلية والإقليمية والعالمية التي بدورها تجعل مهمة وعمل منظمي الطاقة أكثر تعقيداً ومليئاً بالتحديات. ومما يثير النقاشات في الوقت الحاضر موضوعات التقدم في مجال توزيع الطاقة المولدة اللامركزية، ونشر مصادر الطاقة المتجددة والتطورات في موضوع الأمن السيبراني، الأمر الذي يستدعي الاستمرار في إعادة تشكيل السياسات التنظيمية. ويسر الجمعية أنها كانت بمثابة منصة للنقاش لعبور هذه الأوقات المليئة بالتحديات.
وبما أن التقرير التالي يصف أنشطتنا ومشاريعنا لعام 2017م، أود أن أشير إلى ثلاثة إنجازات متميزة تتعلق بالقدرة المؤسسية للجمعية.
لقد احتفلنا في شهر نوفمبر من العام المنصرم بتحقيق إنجاز مهم في تاريخ الجمعية، وذلك بافتتاح

مكتبنا في بودابست بالمجر. ويسرني جداً أن هدف الجمعية في أن تكون منصة موثوقة بامتياز لتبادل المعلومات وأفضل الممارسات والمعرفة بين منظمي الطاقة، أصبح الآن مدعوماً ببيئة ومرافق أفضل تمكن من تحقيقه. يتعين على أي منظمة، أو جمعية أن تواكب تغييرات العصر والمكتب الجديد بالتأكيد يمنح مساحة جديدة للالتزام والإلهام.
ثانياً، أود أن أرحب بإنشاء المجلس الاستشاري الإستراتيجي للجمعية الذي يقدم وجهات نظر قيمة لمنظمتنا. كما أود أن أثنى مساهمة الدكتور. غابور زورني التي تحظى باحترام كبير خلال أدواره كرئيس وأمين عام للجمعية. حيث أنهى غابور خدمته في الجمعية وتقاعد في شهر أبريل 2017م وأود هنا أن أقدم له شكري الجزيل نيابة عن الجمعية بأكملها.
وأخيراً، أود أن أهنئ جميع أعضائنا، وإدارة الجمعية والموظفين بمناسبة إنجاز العديد من المشاريع الرائدة والأداء الممتاز الذي قدموه في عام 2017!

Мы рады представить Вам отчет о деятельности ЭРРА за 2017 год!

Я с удовольствием ознакомлю Вас с данным отчетом, который предоставляет собой описание проектов ЭРРА, реализованных в 2017 году.

Отрасль, в которой мы работаем, подвергается испытаниям и критической оценке как никогда ранее. Мы сталкиваемся с широкомасштабными изменениями в местных, региональных и глобальных энергетических системах, данные изменения еще более усложняют и затрудняют задачи и работу органов регулирования энергетики. Прогресс в децентрализованном распределении – распределенной генерации, распространение прерывистых возобновляемых источников энергии в свете все более важной темы кибер безопасности привели к интенсивным дискуссиям и дальнейшему пересмотру правил регулирования. ЭРРА рада, что организованные нами мероприятия, послужили центром коммуникаций, позволяющим сохранить верные ориентиры в эти трудные времена.

Поскольку следующий отчет в полном объеме описывает проекты и деятельность Ассоциации на протяжении 2017 года, я хотел бы отметить лишь три выдающихся момента, которые в большой степени связаны с ростом институционального потенциала ЭРРА.

В ноябре 2017 года мы отпраздновали довольно знаменательный этап в истории

ЭРРА – открытие офиса ЭРРА, расположенного в Будапеште, Венгрия. Я очень доволен тем, что стремление ЭРРА стать надежной платформой для обмена информацией, передовым опытом и знаниями в области регулирования энергетики, отныне поддерживается благоприятной средой и лучшими условиями. Любая организация, любая ассоциация должна идти в ногу со временем, и новое офисное помещение, безусловно, предоставляет новое пространство для самоотверженной работы и вдохновения.

Во-вторых, я хотел бы приветствовать создание Стратегического консультативного совета ЭРРА, который обеспечит достижение важных стратегических перспектив нашей организацией. Кроме того, я хотел бы выразить благодарность за огромный вклад др. Габора Сореньи, который выступал в роли Председателя и Генерального секретаря ЭРРА. Габор ушел на пенсию из ЭРРА в апреле 2017 года, поэтому от имени всей Ассоциации я хотел бы выразить ему нашу признательность за проделанную работу.

И, наконец, позвольте мне поздравить всех наших членов, руководство и сотрудников Ассоциации с реализацией многих замечательных проектов и с великолепной производительностью в 2017 году!

Mart Ots
Chairman
ERRA

FAREWELL message

from **GÁBOR SZÖRÉNYI**



dr. Gábor Szörényi

Dear Colleagues,

After 23 years of electric utility practice, 23 years ago I joined the newly established Hungarian Energy Regulator. I realized that the world of regulation is an extremely interesting one and regulatory work is a highly challenging one.

While performing their national regulatory responsibilities some regulators in the Central and Eastern European Region and in Eurasia realized that there is lack of knowledge on regulatory theory, literature and education in our region. On the other hand, the utility and network industry regulation has had long history in other parts of the world, especially in the USA. We believed that it is better to ask the advice of regulators with long lasting tradition than to build new regulatory systems from scratch. This recognition, coupled with the readiness of USAID to support our cooperation with USEA and NARUC, resulted in the establishment of a regulatory network, which later on was formed into the creation of ERA.

Studying NARUC's institutional structure and operational practice, in ERA we created a very solid basis for knowledge transfer, exchange of information, training, committee work, preparation of useful research materials and series of annual

conference, where regulators and industry representatives meet each other. I enjoyed very much working with and for ERA in different positions; Committee Chair, Presidium Member, Chairman and General Secretary – thank you very much for all of you for this possibility!

Extending the geographical scope of ERA with new members from Asia, Africa and Middle East, new aspects and possibilities occurred: we have been observing a wide range of market structures, operational models and regulatory methods implemented in these markets, offering possibilities for regulators to develop and for ERA to assist.

After several decades of active work with different responsibilities, I resigned from the ERA General Secretary position. I am still interested in regulatory challenges, I continuously follow the actual European and global tendencies of the new innovative energy industry developments and its supportive regulation – so, I am open to share my ideas and/or transfer my expertise to any ERA member regulator and to any interested party!

Based on my experience I would like to make some proposals for Your regulatory work and ERA activities:

- You should be proud of working as a regulator, as you serve the interest of the whole population in your country!

- Consult with all the interested stakeholders during the preparation of new rules and decisions – in order to understand their aspects!

- When preparing a new regulatory task, research the ERA Library – you can find similar problems and solutions from the past 20 years!

- When facing new challenges ask other regulators (via e-mails or during meetings; directly or through the ERA Secretariat) to learn their expertise and practice!

- During meetings, trainings and any other form of information exchange and knowledge transfer test and develop your language and educational skills sharing your thoughts with other regulators and other stakeholders – be active in ERA and in other forums as well!

Besides these general proposals, I do suggest reconsidering the present regulatory framework and creating new incentives supporting the smart and innovative developments, more involvement of demand side and effective Climate Change measures!

WHO we are

The Energy Regulators Regional Association (ERRA) is an inter-institutional non-profit organisation comprising of independent state energy regulatory bodies from Europe, Asia, Africa, Middle East and the United States of America. The geographical scope covered by ERRA makes it the only truly global energy regulatory association. Its Secretariat is located in Budapest, Hungary and the Ministry of Foreign Affairs and Trade of Hungary is the responsible body for its registration and supervision. The Association's main objective is to facilitate the exchange of information and experience, regulatory research and capacity building among members and other regulators around the world.

ERRA moves into its **FIRST OWN OFFICE**

In 2016, ERRA has gained legal recognition in Hungary as an inter-institutional international organization. The opening of ERRA's new office in 2017 was another, very important stepping stone for our Association, as it symbolizes that from 17 years of international cooperation and from the mutual support of various geographical regions new values can be born, and that those sustainable and common values are built on a solid basis. ERRA started with just one small office space within the building of the Hungarian Energy Regulator with 2 staff persons. From humble beginnings ERRA has grown in size and importance, gradually establishing itself locally, regionally and on international scenes as a recognized and respected network of energy regulators.

The strengthened legal status and the own office ensure that ERRA will continue to be a global international organization of energy regulatory authorities, providing high standard environment for their cooperation and knowledge exchange.

It was a great honor to welcome the Chairmen of several ERRA member organisations, representatives of their Embassies in Budapest as well as major Hungarian utilities for the Office Inauguration Party organized in November 2017.



2017 at a glance

#01

JANUARY

- Joint Virtual Meeting of the Committees
- Strategic Advisory Board starts its mandate



#02

FEBRUARY

- Training Course: Price Regulation and Tariffs
- ERRA Member Regulators: Armenia and Latvia engage in Twinning Project



#03

MARCH

- New publication: License Exempted Electricity Generation
- 1st ERRA Educational Workshop: Energy Efficiency and Regulation



#04

APRIL

- Ad-hoc Consultancy Project for GNERC on assessment of WACC levels
- 5th ERRA Training Course on Energy Regulation in Emerging Countries in Kazan, Russian Federation



#05

MAY

- General Assembly and Concurrent Committee Meetings in Tbilisi, Georgia
- Customers and Retail Markets Working Group Meeting in Chisinau, Moldova



#06

JUNE

- 1st ERRA-NARUC-USAID Technical Workshop on Gas Market Design and Natural Gas Transmission Grid Codes



2017 at a glance

#07

JULY

- 5th High Level Meeting of Regulatory Associations of Emerging Markets
- 15th Anniversary Summer School
- Interns from the Miskolc University start to work at the ERRA Secretariat



#08

AUGUST

- The ERRA Energy Investment and Regulation Conference is promoted at the Future of Energy Expo 2017 in Astana, Kazakhstan



#09

SEPTEMBER

- 2nd Balancing Markets and Ancillary Services Educational Workshop
- Regulatory Specialist joining ERRA
- 16th Energy Investment and Regulation Conference in Astana, Kazakhstan and ERRA Award Giving Ceremony



#10

OCTOBER

- Licensing/Competition and Tariff/Pricing Committee Meetings held in the new ERRA Office
- Database: Publication of electricity and gas tariffs for 2017 Q1 and Q2



#11

NOVEMBER

- Chairmen Meeting and New Office Opening Ceremony
- 30 Water Regulators Gather in Budapest to participate in ERRA's Water Regulatory Training
- Custom made Training Course for the Nigerian Electricity Regulatory Commission



#12

DECEMBER

- Customer Working Group Meeting in Budapest
- 2nd ERRA-NARUC-USAID Workshop on Natural Gas Market Design and Gas Transmission Grid Codes



ERRA **MEMBERS**ERRA **FULL MEMBERS**

Albanian Energy
Regulatory
Authority



Public Services
Regulatory Commission
of **Armenia**



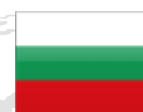
Tariff (Price) Council of
Azerbaijan



Bhutan Electricity
Authority



State Electricity
Regulatory Commission
of **Bosnia and
Herzegovina**



Energy and Water
Regulatory Commission
of **Bulgaria**



Electricity Sector
Regulatory Agency of
Cameroon



Croatian Energy
Regulatory Agency



Estonian
Competition
Authority



Georgian National
Energy and Water
Supply Regulatory
Commission



Hungarian Energy and
Public Utility Regulatory
Authority



Committee on Regulation
of Natural Monopolies and
Protection of Competition
of **Kazakhstan**



State Agency for Fuel
and Energy Complex
Regulation of the
Kyrgyz Republic



Public Utilities
Commission of **Latvia**



National Commission
for Energy Control and
Prices of **Lithuania**



Energy Regulatory
Commission of
Macedonia



National Energy
Regulatory Agency
of **Moldova**



Energy Regulatory
Commission of
Mongolia



Nigerian Electricity
Regulatory Commission



Authority for Electricity
Regulation of **Oman**



National Electric Power
Regulatory Authority of
Pakistan



Energy Regulatory
Office of **Poland**



Romanian
Energy Regulatory
Authority



Federal Antimonopoly
Service of the **Russian
Federation**



Electricity & Co-
Generation Regulatory
Authority of **Saudi
Arabia**



Energy Agency of
Serbia



Regulatory Office for
Network Industries of
Slovakia



Energy Market
Regulatory Authority of
Turkey



National Energy and
Utilities Regulatory
Commission of
Ukraine



Regulatory and
Supervisory Bureau of
Electricity and Water of
Dubai, **UAE**

ERRA MEMBERS

ERRA ASSOCIATE MEMBERS



Regulatory Commission
for Energy in Federation
of **Bosnia and
Herzegovina**



Regulatory Commission
for Energy in Republika
Srpska, **Bosnia and
Herzegovina**



ERERA: ECOWAS (Economic
Community of West African
States) Regional Electricity
Regulatory Authority



Public Utilities
Regulatory Commission
of **Ghana**



Energy and Mineral
Regulatory Commission
of **Jordan**



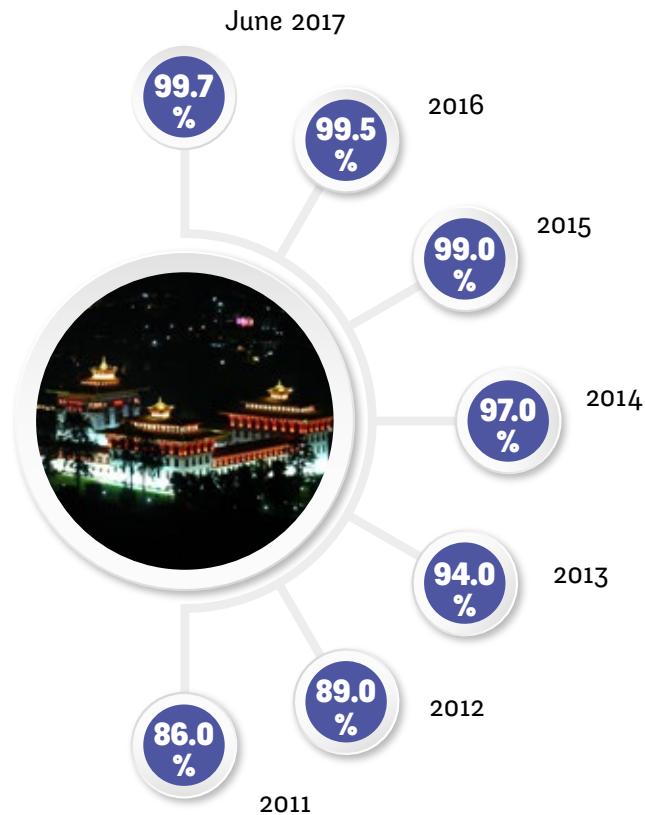
Energy Regulatory
Office of
UNMIK



National Association
of Regulatory Utility
Commissioners, **USA**

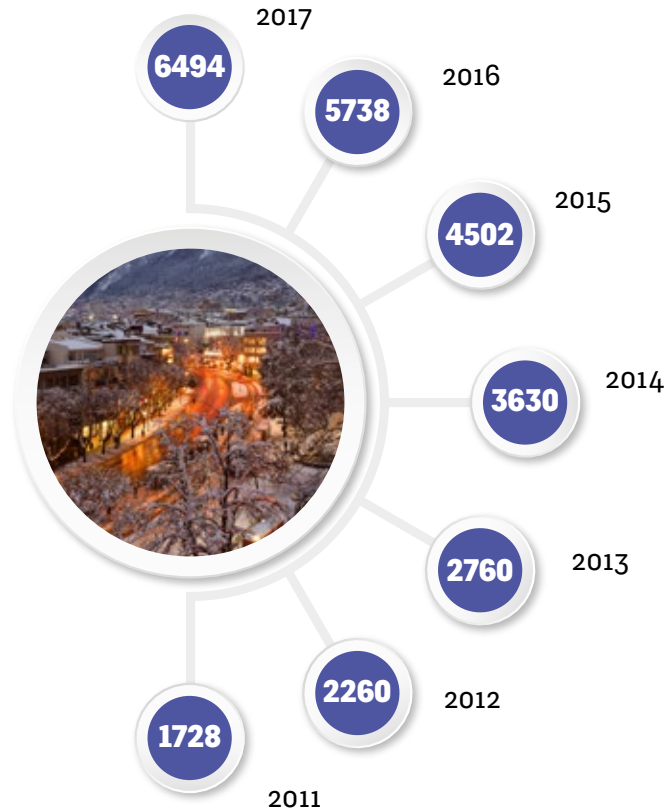
Three of our Members **IN NUMBERS**

ELECTRIFICATION COVERAGE ACHIEVEMENT IN **BHUTAN**



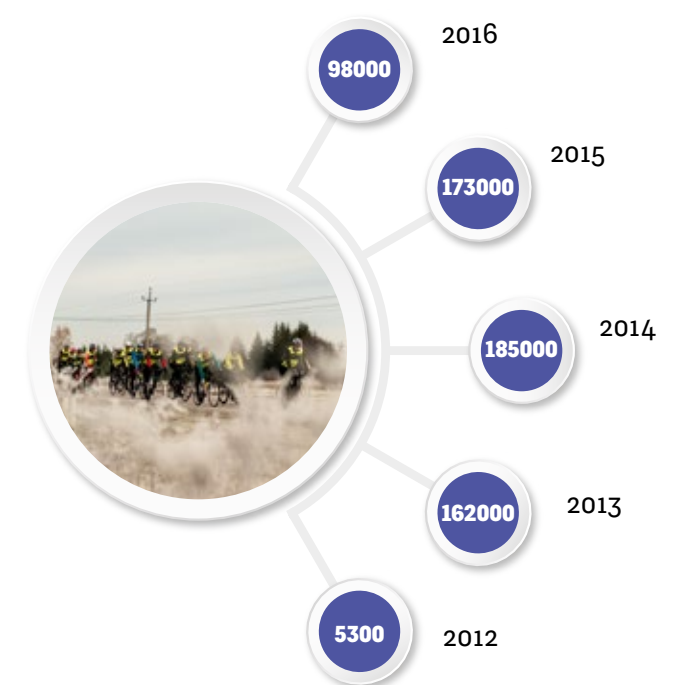
SOURCE: BHUTAN ELECTRICITY AUTHORITY

WIND ENERGY POWER PLANT INSTALLED CAPACITY (MW) IN **TURKEY**



SOURCE: OUTLOOK ON PENETRATION OF RENEWABLE ENERGY IN TURKEY
BY MR. MEHMET ERTÜRK, VICE PRESIDENT, ENERGY MARKET REGULATORY
AUTHORITY OF TURKEY (ERRA CHAIRMEN MEETING, BUDAPEST, 2017)

NUMBER OF SMART METERS INSTALLED ANNUALLY - ELEKTRILEVI, **ESTONIA**



SOURCE:
[HTTP://S3PLATFORM.JRC.EC.EUROPA.EU/DOCUMENTS/20182/195230/11.+HEIKKI+KOLK_ELEKTRILEVI.PDF/09AB99AF-A00C-418E-A638-57EB89A7CADC](http://S3PLATFORM.JRC.EC.EUROPA.EU/DOCUMENTS/20182/195230/11.+HEIKKI+KOLK_ELEKTRILEVI.PDF/09AB99AF-A00C-418E-A638-57EB89A7CADC)

ERRA **MEMBERS**” **ERRA ASKS****MS. IRINA MILORAVA**

Chair
GEORGIAN NATIONAL ENERGY AND WATER
SUPPLY REGULATORY COMMISSION (GNERC)

What is a recent regulatory challenge in your country?

"I think that a recent regulatory challenge in Georgia is Closed Distribution System (CDN). According to Georgian legislation, a gas customer might be connected to a transmission (direct customer) or distribution system (retail customer). There are no other options for categorizing gas customers. However, we observe situation where some small customers are connected to the pipelines owned by direct customers. Hence, those customers' status is undefined – They are neither direct nor retail customers. The legislation might be adapted to such circumstances by introducing the concept of CDN. The CDN regulation should clearly define criteria when a network might be categorized as CDN."

How can ERRA assist in the given regulatory challenge?

"In order to develop CDN concept in Georgia, ERRA may assist in organizing either ad hoc member-to-member project or ad hoc small scale consultancy project. ERRA and GNERC have good experience in joint ad hoc projects: expert exchange project regarding natural gas regulation in 2016 and consultancy project on WACC in 2017. Both projects were very informative and useful. It would be beneficial to get acquainted with experience of ERRA countries in this regard."

**MR. ROLANDS IRKLIS**

ERRA Presidium Member
Chairman
PUBLIC UTILITIES COMMISSION
OF LATVIA (PUC)

"Currently we are working on improvements in tariff methodologies in different regulated sectors – electricity, natural gas, district heating and water supply. We are looking forward for improved evaluation of the reasonable costs of service through benchmarking methods. We are also looking for better methods for assessment of Capital costs, for example methodologies of evaluation of Regulatory Asset Base, cost benefit analysis of new investments, issues related to efficient utilization of assets."

"ERRA is helping to increase level of expertise by developed trainings and network of experts. The trainings related to tariff issues are very helpful for our junior staff to understand general concepts of tariffs. This knowledge helps them to perform tasks with tariff regulation. ERRA is also responsive to specific needs by developing new educational programs required by regulators. For example new workshop on Energy Capital Investment Programs which will be held on March suits very well for our current priority to improve our evaluation of RAB and capital costs."

**MR. JEAN PIERRE KEDI**

General Manager
ELECTRICITY SECTOR REGULATORY AGENCY
(ARSEL), CAMEROON

"A recent regulatory challenge of ARSEL is that of the unbundling of the electricity sector in Cameroon, with the setting up of a Transport System Operator (TSO)."

"ERRA can assist by providing tailored made training programs for the members of staff at ARSEL, as well as facilitate study tours to other regulators who are more advanced in the unbundling process of the electricity sector in particular and public utility regulation in general."

“

GOVERNANCE

PRESIDIUM MEMBERS

The Presidium is the representative and executive body of the Association. It is subordinated directly to the General Assembly. The Presidium consists of seven Assembly Representatives (each from separate Full Members), its members serve for a two-year period.



MÄRT OTS
ERRA Chairman
DIRECTOR GENERAL
ECA, ESTONIA



**ANTHONY
AKAH**
Presidium Member
ACTING CHAIRMAN
NERC, NIGERIA



ATTILA NYIKOS
ERRA Vice-Chairman
VICE-PRESIDENT FOR
INTERNATIONAL AFFAIRS
HEA, HUNGARY



**MARIA
MANICUTA**
Presidium Member
DIRECTOR GENERAL
ANRE, ROMANIA



ROLANDS IRKLIS
Presidium Member
CHAIRMAN
PUC, LATVIA



**MUSTAFA
YILMAZ**
Presidium Member
PRESIDENT
EMRA, TURKEY



**AMER SAIF
AL HINAI**
Presidium Member
CHAIRMAN & NON-
EXECUTIVE MEMBER
AER, OMAN*

*left AER in June 2017

MEMBERS OF THE STRATEGIC ADVISORY BOARD



CHAIRMAN OF THE BOARD
**MR. ALPARSLAN
BAYRAKTAR**

Deputy Undersecretary
Energy and Natural Resources
Ministry of Turkey
Former ERRA and ICER Chairman



BOARD MEMBER
**MR. WALTER
BOLTZ**

Senior Adviser
Former Executive Director,
E-Control
Austria



BOARD MEMBER
MR. DAVID C. BOYD

Vice President
Government and Regulatory Affairs
Midcontinent Independent System
Operator (MISO)
USA

STRATEGIC ADVISORY BOARD

In order to enhance strategic advice and to seek innovative expertise and perspectives, ERRA established a Strategic Advisory Board. It gives non-binding advice to the ERRA Presidium on strategic issues of the Association with special emphasis on performance, sustainability, new business ideas and organisational efficiency.

The Board started its mandate in 2017 and shall serve for a 2 year period.

ERRA INTRODUCES ITS NEW REGULATORY SPECIALIST AT THE SECRETARIAT:



REGULATORY SPECIALIST
**MR. ARDIAN
BERISHA**

Ardian started his career at the Pricing and Tariffs Department of the Energy Regulatory Office of Kosovo. Since 2013 he has been working with donor organizations and private clients in assisting the implementation of various international energy projects on regulatory affairs and renewables. Ardian is working closely with the Secretariat to support ERRA in its various projects and serve as a technical resource to the Secretariat.

WORKING together

CHAIRMEN Meetings

The Chairmen of ERRA's Member Organizations met on two occasions during the course of 2017, with the first meeting taking place on **23 May in Tbilisi** and the second meeting taking place on **9 November in Budapest**.

During the first meeting in Tbilisi, ERRA Chairmen had the opportunity to discuss important issues related to the **new Clean Energy Package** and specifically to the provisions which require EU Member States to accelerate the process of phasing-out administrative setting of electricity tariffs. The discussions questioned whether this policy should be maintained even in those countries with relatively young and inefficient markets. The issue of **regulatory independence** was also an important topic of discussion and it was emphasized as an important tool for achieving regulatory objectives of high quality service with reasonable prices.

The second chairmen meeting took place in Budapest and touched upon important developments in the field of **renewables**, customer billing and the increasingly important topic of cyber security. The bids submitted for the Sakaka project, Saudi Arabia's first utility-scale PV plant, reached an astonishingly low value of 1,7 cent/kWh. The **decreasing costs of these technologies** suggest RES may soon be able to compete in wholesale markets without additional support. On customer billing, ERRA Chairmen discussed the extent to which a **standardized bill** can be applied to various utility providers, even if they are in different countries, in order to make it more understandable and easily comparable for customers. Afterwards, ERRA Chairmen drew their attention to **cyber security** where a presentation from the National Association of Regulatory Utility Commissioners (NARUC) and the European Union Agency for Network and Information Security – ENISA highlighted regulators' important role in addressing cyber-security issues.



SUGGESTED READING:

ERRA Award Acknowledged Paper in 2017

Noor Saleem, Syed Saqlain Raza, Muhammad Bilal (National Electric Power Regulatory Authority of Pakistan): *Effectiveness of Regulatory Governance of Electricity Power Sector of Pakistan*

This study attempts to evaluate one of the important dimensions of regulation (i.e. regulatory governance) of National Electric Power Regulatory Authority (NEPRA). For this purpose, the study considers some of major input attributes of regulatory governance (i.e. capacity, integrity, participation, and predictability) and output attributes of regulatory governance (i.e. legitimacy and credibility).

Available in ERRA's Online Library!

WORKING together

LICENSING AND COMPETITION Committee

CHAIRMAN:

Mr. Saša Šćekić

Head of Licensing and Technical Affairs Department
State Electricity Regulatory Commission (SERC),
Bosnia and Herzegovina

VICE-CHAIRMAN:

Dr. Mustafa Gozen

Head of Group for Market Monitoring and
Legislation Energy Market Regulatory Authority
(EMRA), Turkey

ERRA's Licensing and Competition Committee continued to address important issues related to regulators' roles in facilitating **market liberalization**, licensing and **authorization procedures** for small-scale solar plants for prosumers as well as price deregulation and regional cooperation of power exchanges in the process of **integration of Day-Ahead Markets** (DAM).

During the first meeting in Tbilisi, which took place on May 23rd 2017, licensing and competition committee members emphasized the importance of **non-discriminatory third party** access to new system users as a key requirement for enhancing the efficiency of wholesale and retail markets and covering the main principles of the requirements of the Electricity Directive (Directive 2009/72/EC) about third-party access.

The second Licensing and Competition Committee meeting took place in Budapest on 16-17 October in Budapest. Discussions related to the licensing and authorization process for small-scale solar plants covered case studies by Turkey, Albania and Macedonia. Turkey has now accumulated a vast experience in developing renewable energy projects. The Renewable Energy Resource Areas (RERA) initiative significantly improved the investment framework, helping Turkey achieve the target of **at least 5,000 MW of Solar** installed capacity by 2023. Committee Members also discussed the obligations stemming from the Capacity Allocation and Congestion Management (CACM) Regulation and future steps **towards regional integration** of markets. These discussions also touched upon the Price Coupling of Regions (PCR) project, aiming to deliver a harmonized solution for the European Day-Ahead single electricity market.

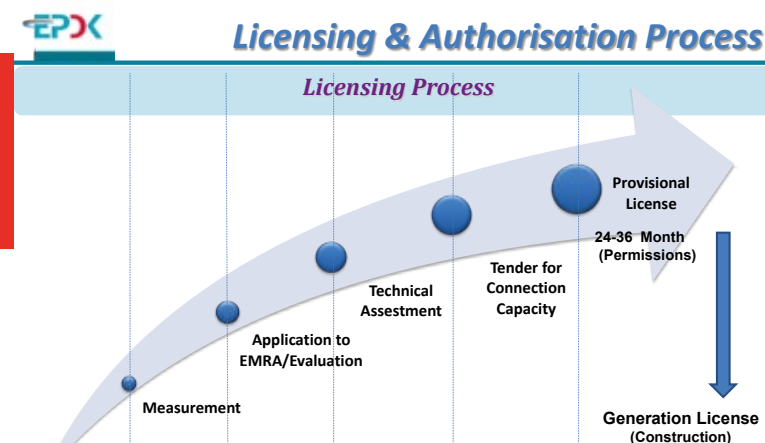


FIGURE 1 An overview of the generation licensing process in Turkey*

* Mustafa Gozen's (EMRA, Turkey) presentation: Authorization process and different supportive elements of solar power in the Turkish Electricity Market, Budapest, 2017.

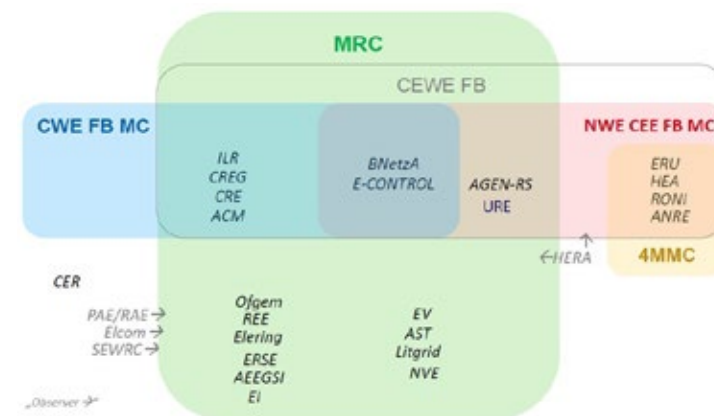


FIGURE 2 National Regulatory Authorities' cooperation framework**

** Attila Bakonyi's (HEA, Hungary) presentation: Regional cooperation of Power Exchanges (PX) and TSOs in the integration process of Day-Ahead Markets (market coupling) – regulatory support, Budapest, 2017.

WORKING together

TARIFFS AND PRICING Committee

CHAIRPERSON:

Ms. Andrijana Nelkova-Chuchuk

Deputy Head of Economic Department
Energy Regulatory Commission of Macedonia

VICE-CHAIRMAN:

Mr. Viesturs Kadiķis

Senior Expert, Electricity Division
Public Utilities Commission of Latvia

ERRA's Tariffs and Pricing Committee was a major discussion hub during the course of 2017, addressing regulatory challenges and case studies to **approve electricity or gas distribution investments** which allow the connection of new consumers to the network and to reflect upon the changing market conditions and the challenges faced during the **transition towards cost-reflective tariffs** as one of the main preconditions for effective market opening.

During the first meeting in **Tbilisi**, which took place on May 23rd 2017, committee members discussed regulatory approval concepts for investments in the distribution network which incentivize investments by studying the cases of Albania and Macedonia. These discussions included EURELECTRIC recommendations for smart distribution network investments for the connection of new customers, highlighting that the applicable regulatory framework should ensure **consistency** between policy and regulation, **allow a reasonable return** based reflecting market rates, it should be **predictable** and that legal and regulatory **barriers should be removed**. Representatives from Georgia then presented a case study for setting the Weighted Average Cost of Capital (WACC) for Georgian utility companies through a technical assistance project facilitated by ERRA.

The second Tariffs and Pricing Committee meeting took place in Budapest on 18-19 October and predominantly focused on implementation challenges that regulators faced in the process of transitioning towards cost-reflective tariffs. Macedonia applied an approach that ensures a step-wise and **gradual elimination of cross-subsidies** as an increasing number of higher-voltage customers are obliged to engage in unregulated supply contracts. This is done in order to avoid a sudden increase in prices of those customers remaining under

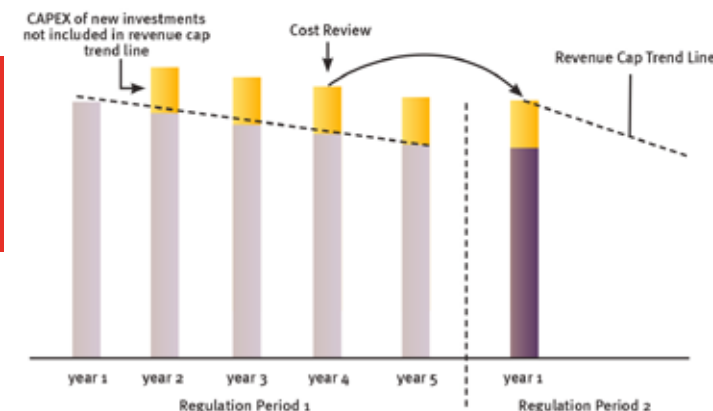


FIGURE 1 The process of compensating for new capex which was not originally approved in the RAB in Albania*

* Lavdi Konjari's (ERE, Albania) presentation: The possible regulatory approval concepts of new investments in distribution network in order to incentivise connection of new consumers, Tbilisi, Georgia (2017)

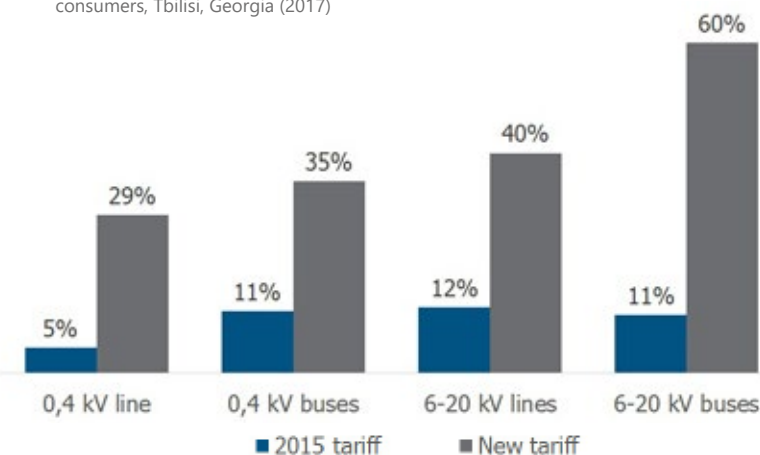


FIGURE 2 The share of the fixed component in DSO tariffs in Latvia**

** Viesturs Kadiķis (PUC, Latvia) presentation: Capacity element of TSO and DSO network charge, Budapest, Hungary (2017)

WORKING together

regulated tariffs (mostly households and small businesses eligible for Universal Service). The committee then discussed the application of standing or capacity charges to recover the fixed costs of service from those consumers with zero or small monthly consumption. Estonia decided to **increase the fixed component of the DSO tariff** and the share of the fixed component depends on the level of connection. ERRA regulators noted that this is a challenge which they face in their own countries – especially due to migration and the increasing number of prosumers whose costs end up being borne by other consumers.

Throughout 2017, Member Organizations continued to populate ERRA's Tariff Database with first-hand information on electricity and gas prices. The Secretariat summarized database submissions in a report shared with all Member Organizations, highlighting key trends characterizing the submissions. For more information, please visit <http://tdb.erranet.org>

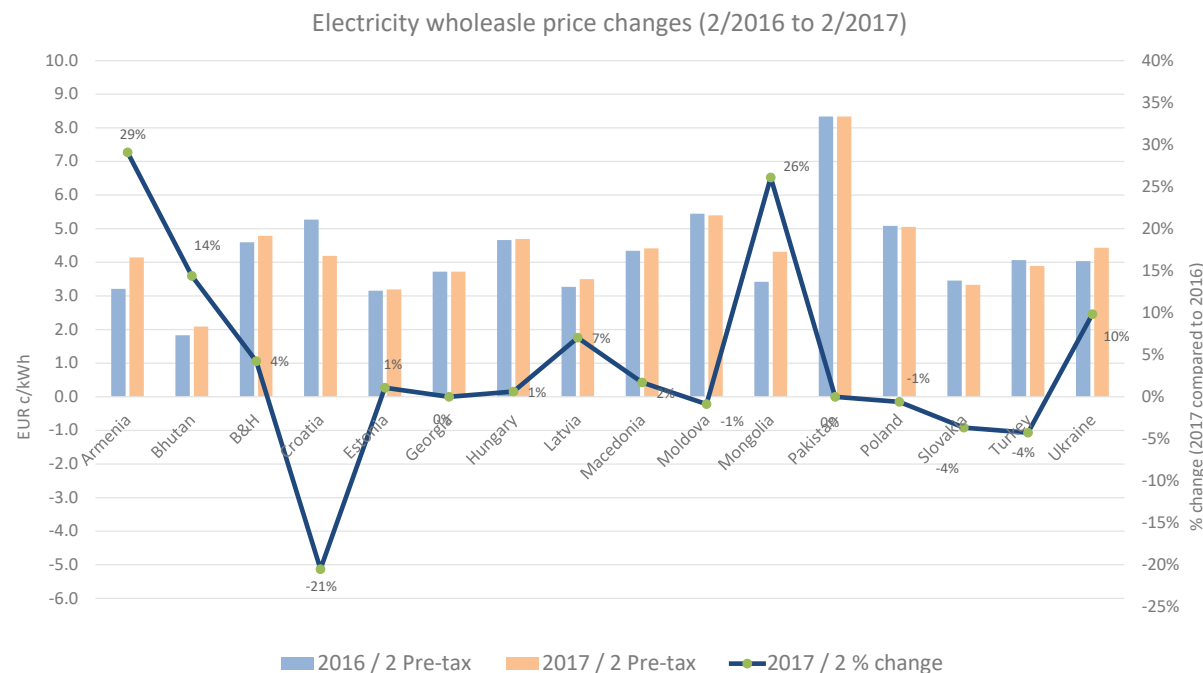


FIGURE 3 Wholesale Electricity Prices reported under the 2nd Quarters of 2016 and 2017, ERRA Tariff Database

SUGGESTED READING:

ERRA Award Acknowledged Paper in 2017

Küllli Haab, Mare Karotamm, Vivika Kruusmägi: *Debt Capital for Estonian Regulated Undertakings*

The aim of this empirical study was to define the actual costs and proportions for including debt capital in administratively regulated undertakings.

The empirical study included regulated undertakings from the regulated sectors which can be categorised as small, medium and large undertakings in Estonia. Their actual costs and their proportions of debt capital were compared to the corresponding indicators defined in the regulatory WACC Manual.

Available in ERRA's Online Library!



WORKING together

CUSTOMERS AND RETAIL MARKETS Working Group

CHAIRPERSON:

Mr. Margus Kasepalu

Head of Department of Energy and Postal Communications
Estonian Competition Authority

VICE-CHAIRMEN:

Mr. Martin Martinoski

Head of Energy Markets Monitoring Department
Energy Regulatory Commission, Macedonia

Mr. Romulus Tatar

Expert, Department of Regulation and Monitoring
Universal Service Obligations
Romanian Energy Regulatory Authority

This year during their first meeting in **Chisinau**, which took place on May 25-26, working group members focused on the issues of consumer poverty, functionality of retail markets and the benefits of switching suppliers. The discussions included, among others, the fact that there is generally a lack of knowledge, on the household consumer side, about electricity prices as there are often many suppliers providing numerous offers which are difficult for household consumers to review. The development of price comparison tools is proving helpful in this regard.

The second ERRA Customers and Retail Markets Working Group meeting took place in **Budapest** on December 5-6 where members discussed topics such as service quality, standardized format for energy bills in Europe, consumer rights and others. A recent CEER Benchmarking report on the quality of electricity and gas supply recommends, among others, that Regulators should implement adequate incentive schemes in order to maintain electricity continuity of supply levels, or even improve these levels if it is economically viable and that these indicators should continue to be harmonized. Working Group members also discussed the Easy Bill concept and the extent to which it can be adopted as a standardized format for presenting household consumption.

SAIFI	>2,0	2,0-1,5	<1,5
Expected improvement	3%	2,5%	1%

SAIDI	>120	120-90	<90
Expected improvement	10%	5%	2%

ENS	>0,115	0,115-0,085	<0,085
Expected improvement	3%	2%	0,5%

FIGURE 1 Expected improvements in SAIFI, SAIDI and ENS indicators*

* Zoltan Lipovits' Presentation: Service Quality Indicators of ELMŰ-ÉMÁSZ, Budapest, December 2017



RELATED PUBLICATION

Benchmark Analysis:

Identifying Different Categories of Suppliers with Public Service Obligations by Martin Martinoski

The analysis was developed based on the answers received from 12 ERRA member countries covering both electricity and gas retail markets.

WORKING together

MEMBER-TO-MEMBER Projects

Based on the success of previous 2 years in the frame of its 2017/18 Annual Workplan ERRA offered small-scale ad hoc consultancy, ad hoc topical research and twinning projects to its member organizations funded entirely from ERRA's annual budget. The aim of such projects is to promote the exchange of technical information and best practices among its members and to expand the in-house consultancy, research and advisory capacity of the organization.

TWINNING PROJECT

Public Services Regulatory
Commission of Armenia (PSRC)

Public Utilities Commission of
Latvia (PUC)

OBJECTIVE:

Exchanging best practices and developing the necessary approaches and incentives to improve the investment activity in the energy sector.

- The regulator's role in the process of planning and coordinating investments;
- Define criteria for harmonization of investment activities;
- Normative framework for the evaluation of investment projects;
- Monitoring of investment activities and its evaluation criteria;
- Methodology survey of investment monitoring;
- Evaluation of investment proving documents.



AD HOC CONSULTANCY

For the Georgian National
Energy and Water Supply
Regulatory Commission

Weighted Average Cost of
Capital (WACC)

SCOPE:

- Review possible advantages and drawbacks of current GNERC WACC calculating methodology;
- Review international best practice examples in setting key WACC parameters and use comparable benchmarks;
- Develop a user-friendly WACC calculation model using the FAST modelling standard;
- Draft a Report outlining WACC-setting approaches tailored to fit Georgian circumstances;
- Develop a consultation paper which GNERC can use to consult stakeholders about proposed WACC values



RELATED READING:

"An assessment of WACC levels for Georgian regulated utility companies",
written by Ardian Berisha is published on ERRA's web-site

For more information and project reports please visit:

<https://erranet.org/member-activities/member-to-member-projects/>

INTERVIEW

DR. HENNING WUESTER



Director – Knowledge,
Policy and Finance Centre

IRENA (International Renewable
Energy Agency)

Q: The negotiations of the 2015 United Nations Climate Change Conference resulted in the landmark Paris Climate Accord to respond to climate change by, among others, holding

the increase in the global average temperature to below 2°C. What is the expected contribution of renewables in the achievement of this target?

A: Accelerated deployment of renewable energy, together with energy efficiency measures, would be able to meet the vast majority of emission reduction needs in the energy sector (90%) to meet the objective of the Paris Agreement to keep global mean temperature rise well below 2 degrees C. In order for this to happen, the share of renewable energy needs to increase from around 15% of the primary energy supply in 2015 to at least 65% in 2050. Much of this can be achieved by increasing renewable energy for heating, cooling, transport and by electrification based on cost-effective renewable power.

Such an energy transition is affordable and is already well under way given the costs of renewable energy technologies (in particular solar and wind) have declined dramatically over the past decade. Renewables-based power is now the cheapest worldwide, and we are seeing dramatic shifts in the energy sector. Worldwide renewables account for a quarter of all power generation today; they also account for the vast majority of global power sector capacity additions since 2012. In locations with adequate natural resource, solar PV, wind, hydropower, geothermal and biomass technologies can now provide electricity that is competitively priced compared to fossil fuel-fired electricity generation.

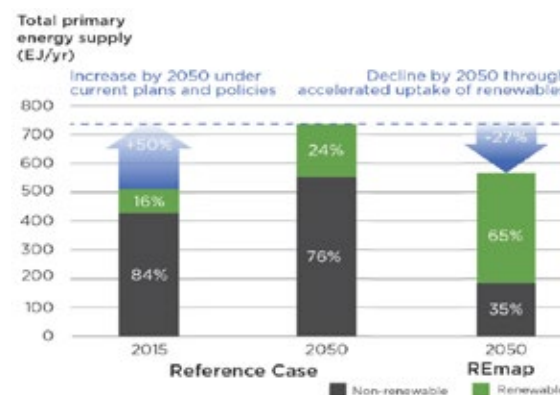


FIGURE 1 Towards a sustainable energy mix*

* Dr. Henning Wuester's presentation at the ERRA Energy Investment and Regulation Conference available in the ERRA Library.

The number of locations where this is the case is rapidly growing as technology improves and cost continue to fall at a rapid rate.

Q: Looks like the future global production portfolio will comprise of a much higher share of renewable energy technologies. What is the scale of investments required to reach the future sustainable energy mix?

A: The energy transition to achieve the changes outlined above will require additional investments, including in renewable energy technologies. The significant cost reductions across the range of renewables and enabling technologies will be major drivers for increased investment, but cumulative additional investment would still need to amount to USD 29 trillion over the period to 2050. This is in addition to the investment of USD 116 trillion already estimated for the energy sector. It would include additional investment needs of USD 16 trillion for renewable energy supply and of USD 8 trillion for transmission and distribution, back-up and battery storage. It would also require additional investment in energy efficiency. But some of the additional investment needs are offset by decreasing investment in fossil fuels. Overall, the investments in renewables have to triple over current levels.

INTERVIEW

An early shift of investment towards renewables and energy efficiency is critical in order to reduce the risk of stranded assets. Taking action early is also critical for feasibly maintaining the option of limiting the global temperature rise to 1.5 °C. Delaying decarbonisation of the energy sector would cause the overall investment requirements to rise and would lead to a massive increase in stranded assets.

Q: Regulators and policymakers are generally concerned about the impact that the additional cost of renewables will have on end-user prices. How is this expected to impact the achievement of the target?

A: The energy transition outlined above is affordable and actually economically beneficial. The shift to renewables and the reduced energy demand through energy efficiency will significantly reduce the impact of the energy sector on human health and help mitigate climate change. The savings through these two factors alone would amount to between two- and six-times more than the costs of decarbonisation.

The overall investment stimulus of the energy transition is also economically beneficial. The energy transition can fuel economic growth and create new employment opportunities. Global GDP will be boosted between 0.6 and 0.8% in 2050. The cumulative gain through increased GDP from now to 2050 is estimated to amount to up to USD 19 trillion. Increased economic growth is driven by the

investment stimulus and by enhanced pro-growth policies, in particular the use of carbon pricing and recycling of proceeds to lower income taxes. Important structural economic changes will take place. The energy sector (including energy efficiency) will create around six million additional jobs in 2050. Job losses in fossil fuel industry would be fully offset by new jobs in renewables, with additional jobs being created by energy efficiency activities. The overall GDP improvement will induce further job creation in other economic sectors.

Q: What is the role of policymakers, especially regulators, in helping attract such significant investments and how important is the stability and predictability of the regulatory framework in this context?

A: Appropriate policy and regulatory frameworks are critical for the energy transition to succeed. The shift in investment requires energy policies to create a stable, long-term and streamlined basis for renewable energy deployment. The policy instruments that enable renewable energy deployment in both the power and the end-use sectors are now well understood in many countries around the world. These instruments allow the creation of a level-playing field for renewables while catering for local conditions and policy priorities. The reduced cost of renewable energy technologies has also reduced fiscal pressure on public budgets and hence allows long-term stability of policy frameworks in place, which is very important for investors.

Policy-making has initially focused on market creation, but it has since moved on to facilitating cost-discovery and improving the cost-competitiveness of renewables. As the sector matures, it is important for policies to continue to be innovative, adapting to changing market conditions while providing a steady framework for the long-term transition. Much of the attention has been devoted to the design of policies for the power sector. Innovative policies to transform end-use sectors, such as heating and cooling and transport, now have to gain more prominence to ensure a comprehensive approach to the energy transition.

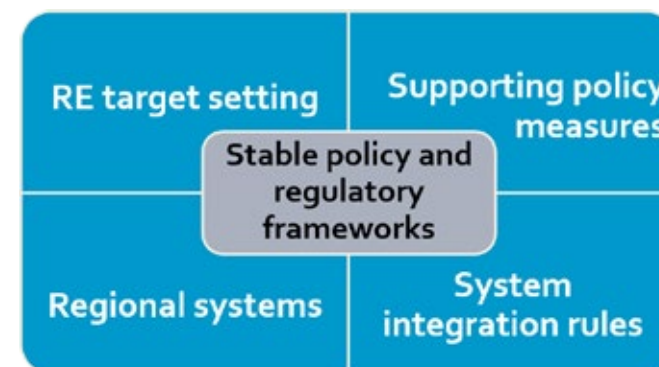


FIGURE 2 The role of regulators*

* Dr. Hennig Wuester's presentation at the ERRA Energy Investment and Regulation Conference available in the ERRA Library.

Policies will be most effective when they recognise and maximise the full range of benefits of renewable energy. As explained above, this includes besides the

INTERVIEW

climate-related and other environmental benefits, positive effects on economic growth, employment and a wide range of other socio-economic benefits. Appropriate policies can aim at maximising the resulting human welfare during the transition.

Q: The current draft measures under the Clean Energy for All Europeans (Winter Package) foresee that priority dispatching is abolished for future RES production facilities. How do you think this will impact investments in RES?

A: Creating a level playing field for renewable energy sources to compete in the power sector is the most critical aspect of stimulating the changes required for the energy transition. Given the competitiveness of renewable energy technologies, the importance of priority dispatch is greatly reduced. If it is replaced by a merit-order approach, low-cost power generated by renewable energy sources will prevail in the market. Taxing carbon and other externalities of conventional fuels would add to creating such a level playing field that would enable the continued shift to renewables in the power sector.

Q: Lastly, how important is regional market integration in helping increase the ability of our power systems to safely and reliably integrate additional renewables?

A: The transition to power systems with a high share of variable renewable energy (VRE), in particular solar and wind, will bring fundamental changes to power

system operations. Reduced output-dispatchability and the potential non-synchronous nature of VRE generators will require new ways of operating power systems. But this only becomes a challenge as the share of VRE grows above certain thresholds. At low shares, investment needs may be limited and focused on transmission reinforcement, especially if supported with increased electricity market and operation coordination at the regional level. There may even be economic opportunities for locating VRE sources close to load centres to increase grid stability.

European electricity markets have succeeded in integrated increasingly higher shares of VRE into the grid without significant investment in storage.

Much of this was possible by adapting the design of balancing markets to ensure that the right incentives are set. Improved transmission infrastructure to ensure that markets can operate effectively across large regions is key to a successful expansion of renewable energy. For many regions, there is still scope to advance such market integration and thereby increase their ability to benefit from the energy transition. Given the reduction in the cost of battery storage, which is well under way and expected to continue, the potential for cost-effective integration of very high shares of renewables, eventually reaching 100%, is increasingly recognized as a feasible future. Integrating a growing market of electric vehicles provides additional opportunities for such developments.

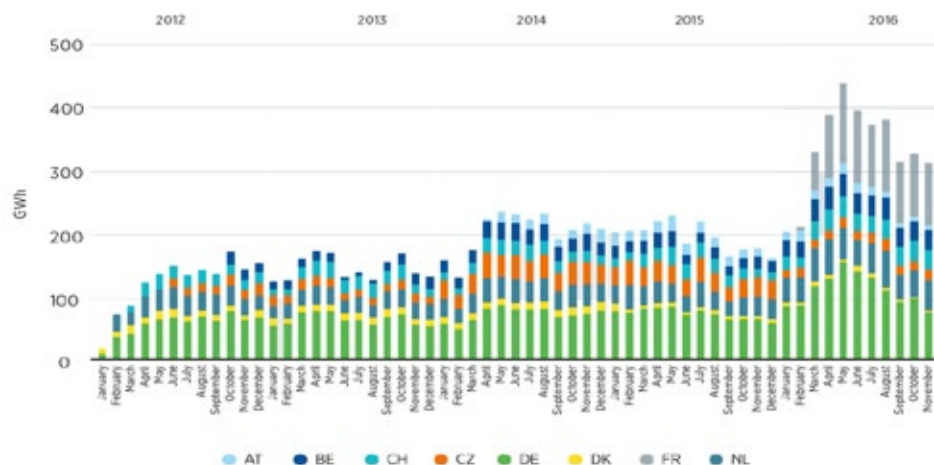


FIGURE 3 Market Integration is a key driver to promote overall efficiency and system security*

* Dr. Hennig Wuester's presentation at the ERRA Energy Investment and Regulation Conference available in the ERRA Library.

Clearly, the shape of the energy sector will change fundamentally, as the global transformation advances. All actors, from energy producers, utilities, consumers, policy-makers and regulator will have to adjust to changes. But the potential gains from this transformation are significant. The earlier policy signals are put in place, the easier it will be for actors to adjust and reap those benefits.

INVESTMENT Conference

16th ERRA ENERGY INVESTMENT AND REGULATION CONFERENCE

IN BRIEF

- 2nd Investment Conference in Asia, 1st in Central Asia
- 25-26 September 2017, Astana, Kazakhstan
- Host: Committee on Regulation of Natural Monopolies, Protection of Competition and Consumer Rights under the Ministry of National Economy of the Republic of Kazakhstan
- 150 participants from 30 countries
- 33 speakers in 4 sessions

OPENED BY:



**SERIK MAKASHEVICH
ZHUMANGARIN**

Vice Minister,
Ministry of National Economy
of Kazakhstan



TOPICS

SESSION I



**Current Status
of the Energy Industry
in Kazakhstan**

SESSION II



**Opportunities on
Gas Markets and
Competitiveness of LNG**

(Investment, Incentives, Impact on
Pipelines, Access, Interoperability)

SESSION III



**Rethinking Energy: The Role of
Renewable Energy in Meeting
Climate Change Goals**

(How Policy Can be Used to Promote Renewables
Markets; Mobilizing Investment into Renewables;
Impact of Innovation on Renewables)

SESSION IV



**The Energy Customer: The
Changing Energy Market
and its Regulation**

(Prosumers, End-user Pricing, Changing
Role of the DSOs)

INVESTMENT Conference

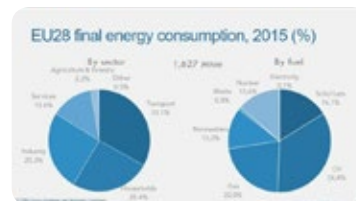
KEY MESSAGES

The conference focused on key regulatory issues the energy sector faces in enhancing the energy security of supply while **evolving to accommodate production from increasingly diverse energy sources**. The conference provided an excellent discussion platform to address opportunities in gas markets and the competitiveness of LNG, the role of RES in meeting climate change and evolving energy markets and their regulation. The **future of European gas policy** and its likely impact on the global gas markets was extensively discussed during the conference. On climate, achieving the 2 °C target requires a **significant increase in investments on RES technologies**, especially for developing economies. **Stable policies and regulatory frameworks**, coupled with adaptive network infrastructures, are of critical importance in incentivizing these additional RES investments and regulator's role in this aspect is crucial. Key messages related to the changing conditions around energy markets highlighted that the **major changes stem from areas of policy, technology and economic circumstances**, which require prompt and effective responses in order to foster and should be addressed by adequate regulation while facilitating institutional coordination.



RELATED MATERIALS

What Future for Gas in Europe? Which role will gas play in the EU energy mix in 2030 and 2050? How much (how little) fossil gas can Europe use and still reach climate goals? What does this mean for CEE producers and for gas transit countries? – an outstanding video presentation by **Walter Boltz, Senior Adviser, Former Executive Director, E-Control, Austria; Board Member, ERRA Strategic Advisory Board**



NEW THIS YEAR

As part of the conference programme ERRA portrayed the energy market of a Guest Country, for the first time in ERRA's history. ERRA's first guest country was **MEXICO**. Mexico's Energy Reform was presented by Alejandro Chanona, General Director of Planning and International Affairs, General Coordinator of the VII World Forum on Energy Regulation (VII WFER), Energy Regulatory Commission (CRE), Mexico.

SOCIAL AND CULTURAL

ERRA Conferences are moving across member countries with the clear aim to showcase not only different energy sectors of our colorful world, but also to highlight the cultural diversity of our members. Also, we find it important to create the platform for participants to engage in informal discussions after the busy conference hours. This year participants enjoyed a truly Kazakh dinner enriched with folklore show and a sightseeing tour of Astana.



Following our tradition, we were happy to provide Conference delegates with a broad picture of the energy market of the host country of the Conference. This year we were pleased to offer a comprehensive report on Kazakhstan Energy Sector, prepared by **Kazenergy** (www.kazenergy.com).

SEARCH THE ERRA LIBRARY!

More presentations focusing on the host country are available in the ERRA Library!

Great resources for learning more about Kazakhstan!

INVESTMENT Conference

Interview with GÜLEFSAN DEMIRBAS

Department Head, Strategy Development Department, Energy Market Regulatory Authority (EMRA), Turkey; Head of ICER's Virtual Working Group 2: Gas and Other Fuel.



of the Conference, Gülefsan Demirbas.

ERRA asks Gülefsan about her impressions on the event:

Q: ERRA is always happy to enjoy an increased number of Turkish participants in the Conference, both from the regulator and from the industry. What do you think, what is the main reason? Why do you and your colleagues from EMRA and from Turkish energy companies return every year to ERRA?

A: Turkish energy market is the fastest growing among the OECD and is in need of mass amount of investment. The ERRA Energy Investment and Regulation Conference has a good reputation since it brings together regulators, investors, market players and others around the same table, which provides invaluable

opportunity to be aware of developments in the energy markets and regulatory discussions, and for networking. Last but not least, EMRA's presence in ERRA's governance increases the awareness of local stakeholders about the ERRA Conference.

Q: What was the conference topic this year that you found the most relevant and engaging (for Turkey)?

A: On the way to Energy Investment & Regulation Conference in Astana, we have issued the regulation pertaining to wholesale gas market, the first FSRU has been commissioned and I, personally in my capacity of the chair of the ICER VWG on Gas and Other Fuels has started the preparation of a report, together with IGU, on the investment security of LNG infrastructure. Thus, the conference topic "OPPORTUNITIES ON GAS MARKETS AND COMPETITIVENESS OF LNG (INVESTMENT, INCENTIVES, IMPACT ON PIPELINES, ACCESS, INTEROPERABILITY)" was the most relevant and engaging.

Q: What is your opinion about the venue? Is it an important element of the Conference as a whole? What was the added value in this year with bringing in the Central Asian expertise?

A: I think yes, the venue is an important element of the conference. Beside the modern facility opportunities of the venue, its accessibility is crucial in attracting more audience. Astana was the far east location among the ERRA conferences organized so far. Moreover, it was the first time that the ERRA Conference was organized in a Central Asian country,

a region with vast amount of energy resources and promising investment opportunities. The added values organizing the ERRA Conference in Astana are two: First one is the showing ERRA's inclusiveness to all its members and beyond; while the second one is increasing awareness about the developments and opportunities in Kazakhstan.

Q: Who do you meet during the ERRA Conferences? What is the participant composition?

A: I meet colleagues and friends from abroad, especially the ones from regulators and the ERRA secretariat staff. I do enjoy participating to women in energy activities. It is good to learn that more than one third of the participants of the last conference were women. Another remarkable figure about the Conference in Astana was the more balanced participation of regulators and non-regulators.

Q: What was the best idea or information that you learned during this Conference?

A: The most interesting information I learned was the "tariffs in exchange for investments" of Kazakhstan for promoting new investments to achieve 100% electricity access throughout the country, and Kazakhstan's ambitious target of reaching 50% renewable electricity generation by 2050.

<https://erranet.org/conference/investment-conference-2017>



TRAINING courses

ERRA is ASSOCIATED WITH TRAINING

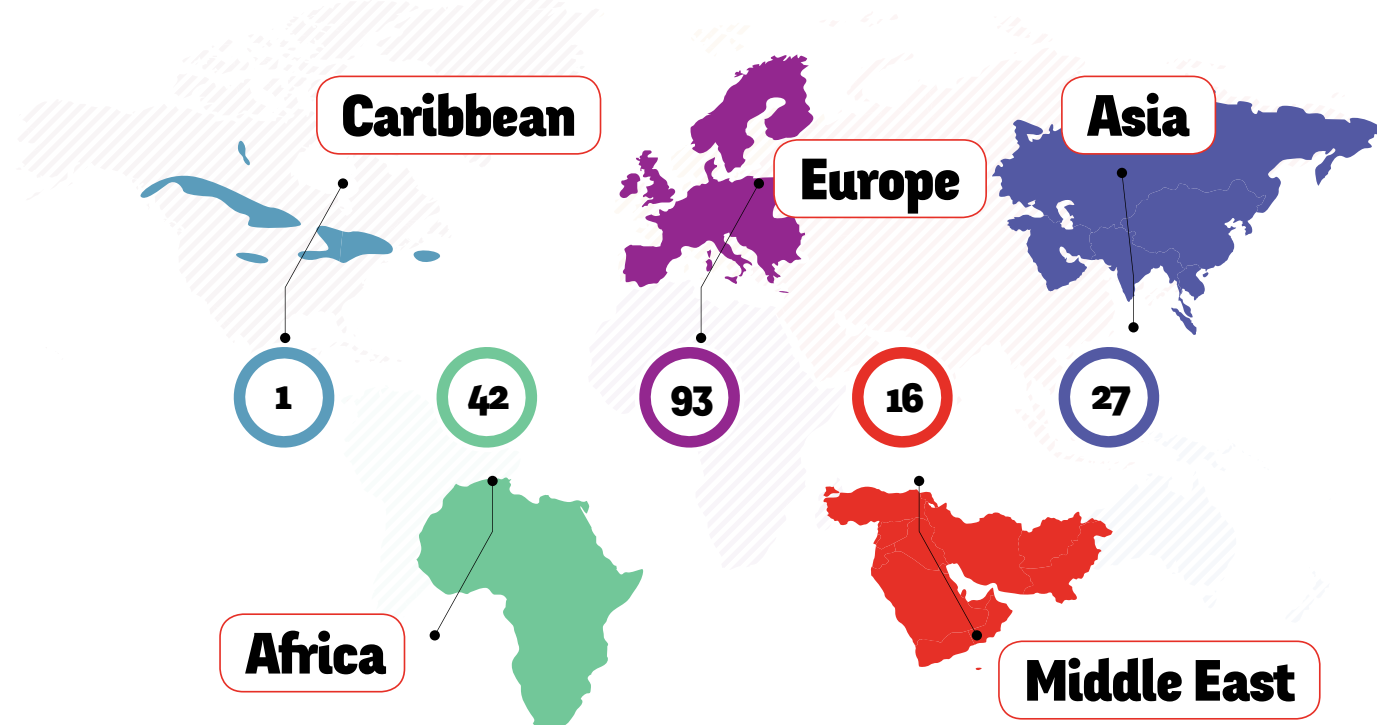
and education by many of our partners and indeed, we are very proud of our training portfolio, our training expert base and our training alumni of the past 15 years.

In 2017 we continued to expand our training portfolio by designing a pioneering **Educational Workshop on Energy Efficiency and Regulation**. The objective of this new program is to provide concise knowledge on those components of energy regulation that have direct relevance to meeting wider energy efficiency policy objectives.

The **ERRA Summer School celebrated its 15th anniversary** in July and we are happy to see that this course remains ERRA's flagship educational event and attracts record number of participants on an annual basis. A new addition to the agenda was a site visit to the Nuclear Power Plant in Paks, Hungary – much appreciated by the participants.

Another outstanding educational event of the year was a **tailor made training course** designed for 26 staff members of the **Nigerian Electricity Regulatory Commission (NERC)** in November 2017 and we feel honoured that the Nigerian regulator selected ERRA as their capacity building venue.

PARTICIPANTS in 2017 came from:



TRAINING courses

LET OUR TRAINING PARTICIPANTS SPEAK about their experiences with ERRA's courses

15th ERRA SUMMER SCHOOL, BUDAPEST



„I am professional in electricity regulation. This training programme had covered at least 2 areas of interest for me: electricity and gas, but also the overall political and the dynamics of the regulation trends were interesting. One unique thing that ERRA offers to the candidates, the training participants is the way the topics are structured. The lecturers are very good, and the programme gave a very large spectrum of all the challenges, the things that a regulator needs to build for its own capacity. The other unique feature is that at ERRA you can gather very different aspects, different experiences and the trainees have the opportunity to share and present their country cases. I do encourage all those who are interested in regulation to come and to share this unique experience. I hope and I am sure that I will be back as well.”

**Ms. Laura Valente Nhancale, Head of Economic Regulation,
National Electricity Counsel (CNELEC), Mozambique**



„There are a lot of people from a lot of countries and it's good that they share their experience in regulatory markets: this is the most beneficial thing.”

**Mr. Sadik Caki, Assistant Specialist,
Energy Market Regulatory Authority (EMRA), Turkey**

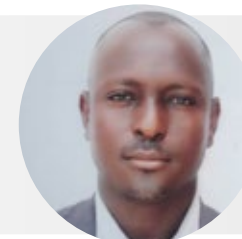


TRAINING COURSE DESIGNED FOR THE NIGERIAN ELECTRICITY REGULATORY COMMISSION, BUDAPEST



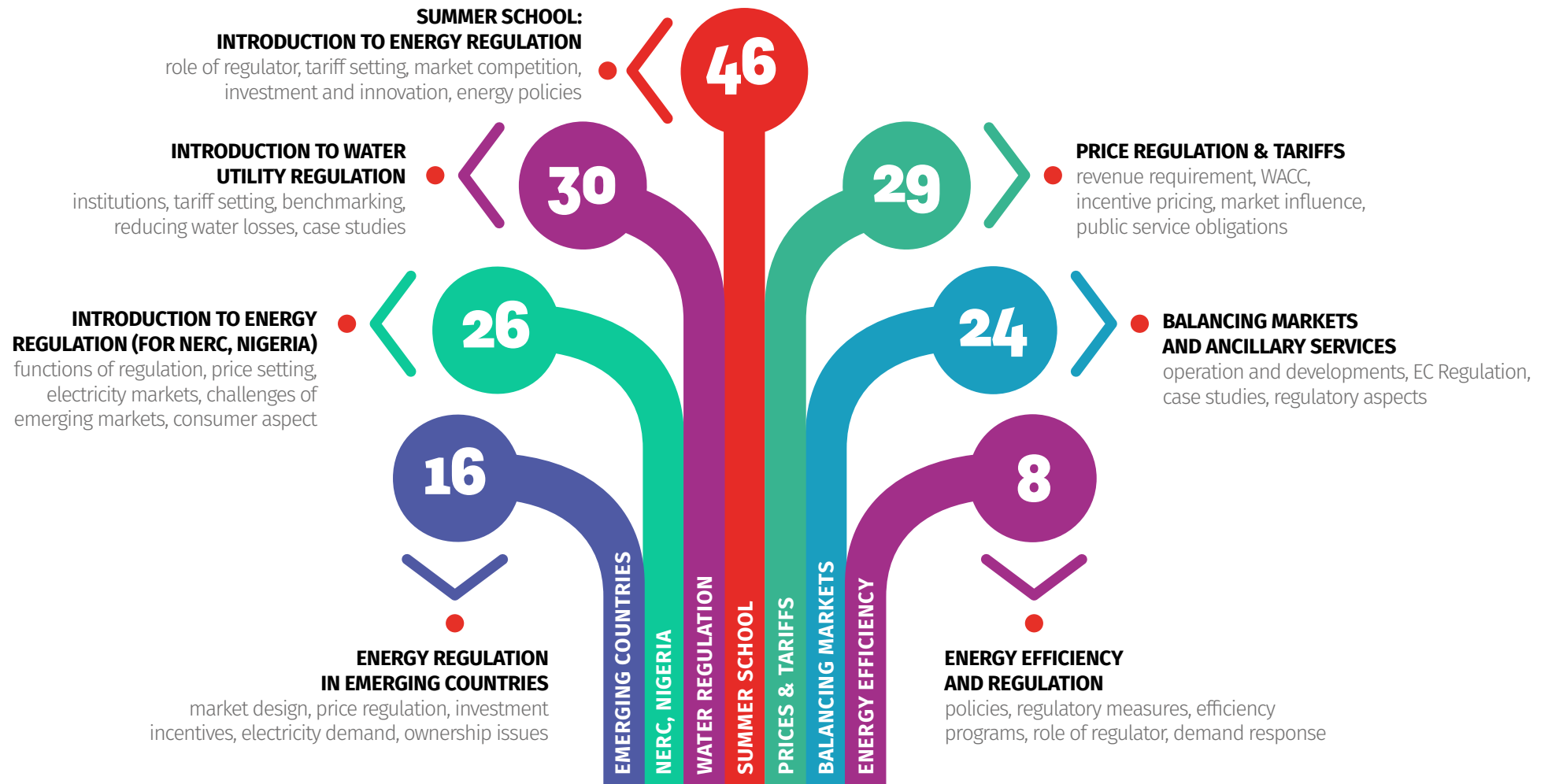
„Within this one week programme the knowledge gained is quite amazing. It's subject of the experience shared from case studies from different countries, which are quite relevant. We will take the experience back home.”

**Mr. Habib Shettima Kidaji, Senior Manager, Human Resources & Administration,
Nigerian Electricity Regulatory Commission (NERC), Nigeria**



TRAINING courses

PARTICIPANT NUMBERS and main topics

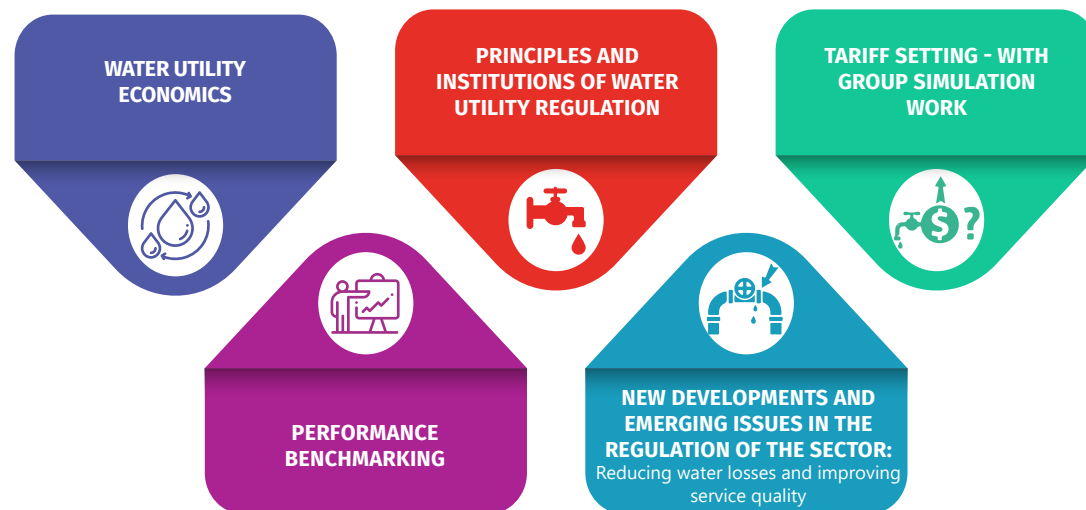


COURSES IMPLEMENTED in 2017

TRAINING courses

3rd ERRA Training: **INTRODUCTION TO WATER UTILITY REGULATION**

There is one particular ERRA educational course which is trying to fill an immanent market gap – that is the lack of systematic training programs offered to water utility regulators. The ERRA Water Regulatory Training Course offered for the third time in 2017 serves the need of regulators involved in water regulation. We have realised a new tendency evolving internationally: there are more and more energy regulators assuming the additional role of water utility regulation every year. While there are clear interdependencies and synergies between water and energy regulation, there are very sector specific regulatory issues of water utilities – hence the tailor-made training course.



Why were the **TOPICS IMPORTANT?**

- “ It will **IMPROVE OUR PERFORMANCE** as regulators
PARTICIPANT 1 “
- “ We are now working on the renewal of the **TARIFF METHODOLOGY**
PARTICIPANT 2 “
- “ Good indicator of what **SHOULD OR SHOULDN'T** be approved in certain situations
PARTICIPANT 3 “
- “ Because we have considered discussing other possible **PRICE MODELS** for particular households or regions with seasonal high water consumption
PARTICIPANT 4 “
- “ We are new, so trying to find **CREATIVE SOLUTIONS** to our challenges
PARTICIPANT 5 “

Student **TESTIMONIAL:**



“This ERRA course provided me with strong understanding of water utility regulation, particularly **principles of licensing, price regulation, tariff setting and tariff structures, performance benchmarking**, the differences between regulation of water and energy services. Also, the role of regulator, **regulatory models**, including best practices, as well as wide problems in **water and wastewater management**, presented to us by highly competent and inspiring instructors. “

by Dragana Bjelobrkovic Vukcevic, Montenegro Energy Regulatory Agency

ERRA **AWARD**The ERRA **REGULATORY RESEARCH AWARD**

was established in 2014 to encourage, reward and expand energy regulatory research and analysis and contribute to improve regulatory practices among ERRA energy regulators.

The 2017 Awards were officially announced during the 16th ERRA Energy Investment and Regulation Conference on September 25 in Astana, Kazakhstan.



AWARD WINNER #1,

Pálma Szolnoki and ERRA Vice-Chairman, Attila Nyikos during the Award Giving Ceremony in Astana, Kazakhstan



MONITORING NATURAL GAS BALANCING MARKETS. A PRACTICAL GUIDE FOR REGULATORS ON HOW THE PERFORMANCE OF THE IMPLEMENTED BALANCING MECHANISMS CAN BE ASSESSED *prepared by Pálma SZOLNOKI, Senior Business Analyst at IP Systems Ltd, PhD student at the Corvinus University of Budapest*

Gas market liberalization is an ongoing process in many ERRA countries. The experience of by now mature natural gas markets shows that balancing mechanisms had pivotal role in the market transition process. Consequently, ERRA regulators should closely monitor and assess the effects of implemented balancing measures on the market. However little explicit guidance is available on how these balancing focused analyses should be conducted especially in case of markets that lack a liquid centralized trading platform and market mechanisms are in a premature phase.

The paper aims to contribute to the work of ERRA regulators by providing an example on how such assessment could be performed in practice. A theoretical framework is built and based on that indicators are defined. The functioning of these is demonstrated on the case of the Croatian market.



PERSPECTIVES ON REGULATING A REGIONAL ELECTRICITY MARKET: THE ECOWAS EXPERIENCE *prepared by Ifey IKEONU, Regulation Specialist and former Council Member, ERERA*

The paper examines the rationale behind the establishment of the Economic Community of West Africa (ECOWAS) regional electricity market. It discusses the peculiarities and differences within the various domestic electricity markets making up the West African Power Pool (WAPP) and how these impact on the operationalization of the regional market. It also examines the various institutions as well as the legal and regulatory frameworks that have been put in place to ensure that the vision and objectives behind the establishment of the regional market are met.

The paper looks at the role of the ECOWAS Regional Electricity Regulatory Authority (ERERA) as regional regulator and discusses the various steps that has so far been taken to actualize the development of the regional market and the challenges and lessons learnt by ERERA which will be useful to other regions proposing to set up similar regulatory bodies.





ESTONIAN EXPERIENCE IN IMPLEMENTATION OF INCENTIVE TYPE OF PRICE REGULATION.

Authors are: Märt OTS, Estonian Competition Authority; Arvi HAMBURG, Tallinn University of Technology; Einari KISEL, WEC and Tarmo MERE Elektrilevi OÜ

Administrative resources of the regulatory body and the number of regulated utilities is an important criteria in selection of price regulation methodology. Estonian experience is based on a large number of relatively small utilities. The price regulation methodology implemented is incentive type of Rate of Return where the important element is the regulatory deterrence, where the company can select whether to apply for new tariff or to rely on the existing one. The administrative burden is minimized in this case. The results of price regulation indicate significant savings on energy losses and stable service tariffs.



SMART METERING: AN EVOLUTIONARY PERSPECTIVE. GUIDELINES AND LESSONS LEARNT FROM THE ITALIAN REGULATORY EXPERIENCE.

Authors are: Alessandro PITÌ, Politecnico di Milano; Eleonora BETTENZOLI, Marco DE MIN, and Luca LO SCHIAVO, Italian Regulatory Authority for Electricity Gas and Water (AEEGSI)

The aim of this paper is to draw some general advices on smart metering from a significant long-term regulatory experience in Italy. Smart metering systems provide benefits for the whole value chain of the power sector including new actors. It's intended to provide all the regulatory authorities with insights on a conceptual evolutionary perspective for smart metering, underlying different applications and goals according to the structure and maturity of the general change trends in electricity, like privatization, liberalization and system transformation. Three typical approaches are described, and benefits are reported according to the relevant main goals: increasing efficiency in the distribution-oriented approach, fostering competition in the retail-oriented approach and promoting customer awareness and market participation in the customer-oriented approach. Countries and NRAs that are considering or assessing to substitute traditional meters with new smart metering systems can draw some important advices driven by the Italian experience, according to their specific context, the set-up of the power system and their market structure.



Other Acknowledged Submitted Papers

EFFECTIVENESS OF REGULATORY GOVERNANCE OF ELECTRICITY POWER SECTOR OF PAKISTAN.

Authors are: Noor SALEEM, Syed Saqlain RAZA and Muhammad BILAL from National Electric Power Regulatory Authority (NEPRA), Pakistan

DEBT CAPITAL FOR ESTONIAN REGULATED UNDERTAKINGS.

Authors are: Külli HAAB, Mare KAROTAMM, Vivika KRUUSMÄGI from Estonian Competition Authority

The publications and video summaries by authors are available at: <https://erranet.org/knowledge-base/erra-regulatory-research-award/>

Cooperating, **PARTNERING**

ERRA is proud to continue to lead and organize the **Annual High Level Meeting of Associations of Emerging Regions**. The objective of these meetings is to offer a high-level exchange platform for Associations of regulators representing emerging economies to develop cooperation and exchange of experiences in several areas of energy regulation. As a result of the past five meetings, the participating associations will sign a **Memorandum of Understanding** during the 2018 World Forum of Energy Regulators providing the general framework for cooperation between the participants through transfer of knowledge and experience, sharing and establishing research documents and publications.



As a result of bilateral cooperation with NARUC, there were two technical workshops organized jointly (funded by USAID) focusing on **Natural Gas Market Design and Gas Transmission Grid Codes areas** where regulators have a critical role. It is expected that the initiative continues in 2018 and further workshops are organized addressing natural gas market regulatory issues.

The South-East Europe 2050 Electricity Roadmap Project (jointly funded by the Austrian Government and the European Climate Foundation) aims to build capacities in the South East European region amongst think tanks and policy makers on long term energy planning and modelling through organizing workshops and trainings. ERRA was one of the facilitators of these workshops focusing on present and future challenges of network operation and development together with the basics of CBA assessment.



Working together with the Turkish Energy Foundation (TENVA) contributed to the development of a software collecting documents and best practices on technologies, legal issues and financial evaluation of **License Exempted Electricity Generation**. The project has been jointly financed by the European Commission and the Republic of Turkey. The core of the project is the compilation of a Handbook on License Exempted Electricity Generation.

These publications are available in the ERRA Library!

NEXT projects

Looking TO THE FUTURE

We expect that 2018 will bring some new activities and projects as we are in the midst of evaluating the impacts and results of ERRA's past 5-year **strategic plan** by an internal Ad Hoc Task Force. Without having the concrete results of the above project we anticipate some slight adjustments and fine-tuning of the Association's activities and priorities already next year. New strategic projects will be defined by the Task Force and proposed to the ERRA General Assembly in April 2018.

In ERRA's internal work member and partner organisations will witness continued, high level professional exchange of experience taking shape in committee workplan, bilateral and multilateral exchange programs, online podcasts and hopefully revised content of ERRA's reference tariff database.

ERRA's educational efforts will be reinforced by updated training modules and **new training workshops** such as our new educational initiative focusing on regulatory aspects of energy capital investment programs in March 2018.

In the international arena ERRA remains open to regulators from new countries and geographic regions joining our Association as **new member organisations**. We are confident that the diversity of our members and their differing regulatory practices add value to ERRA and it increases our overall capacities.

We are particularly looking forward to the **7th World Forum on Energy Regulation** organized in March 2018 in Mexico. This is the leading international conference of energy regulators gathering from 6 continents every three years to discuss new industry developments and their related regulatory frameworks. ERRA is a co-organiser of the event and expects the participation of many of its member organisations.

The ERRA **Energy Investment and Regulation Conference** will be very different from previous years – we promise! It will be organized in October 2018 in partnership with the **Turkish Energy Summit in Antalya, Turkey**. Participants of the ERRA Conference will have free access to the Turkish Energy Summit thus delegates will have the chance to attend altogether 8 high level sessions during the 2 days. In addition, the Conference will feature **poster presentations** as part of ERRA's Regulatory Research Project.

STAY TUNED AND FOLLOW US ON THE ERRA WEBSITE, ON OUR FACEBOOK AND TWITTER ACCOUNTS!





ENERGY REGULATORS REGIONAL ASSOCIATION

ERRA SECRETARIAT

☎ **+36 1 477 0456**

☎ **+36 70 392 59 86**

✉ **SECRETARIAT@ERRANET.ORG**

🌐 **WWW.ERRANET.ORG**