



# ACTIVITY REPORT

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ERRA Strategic Advisory Board Chair

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### Dear Members, Partners and Friends of ERRA,



It is my pleasure to invite you to read our 2021 Activity Report, which describes ERRA's functioning throughout another year of near-fully online operation. The year was again not easy, as the grip of the pandemic still held us tight. In addition, the closure of the year was for many marked by record breaking electricity and gas prices that rocked the markets and escalated concerns over affordable and reliable supply of energy.

Despite those hardships, **our members have shown incredible resilience throughout the tough time and the Presidium and Secretariat would like to sincerely thank all of them for continuously supporting the Association and for taking active part in all our activities.** Thanks to the 1<sup>st</sup> round of hybrid meetings that took place in Budapest in late November, we believe we have started our long way back to normalcy. It is uncertain when ERRA could welcome all its members again at the Association's headquarters, but the hopes for 2022 are high and more hybrid meetings are planned to bring the integration back to the extent possible.

This report presents what was a suppressed but very active operation in the year 2021. **The ambitious targets set out in 2020-21 & 2021-22 workplans gave fruits to a wide range of programs, activities and initiatives that gathered big internal and external audiences.** ERRA has also seen high engagement in terms of activation of many contributors and provision to even more beneficiaries.

In 2021 we continued with our good practices of internal technical work in the Committees and the Working Group, which is supported by a number of publications. Further exploration of regional regulatory workshops guaranteed more focused exchange of experiences in local formats, while bilateral meetings of ERRA management team and members brought in discussions on specific needs and challenges. Online capacity building for members, and other participants reached maturity with comprehensive and trusted learning methodology that receives highly positive feedbacks. Public programs such as webinars explored cutting-edge topics and, while having reached record high audiences, increased ERRA's overall recognition in the sector. **The Association has also devoted a great deal of attention to brand new topics and areas, such as gender equality and regulatory role in climate action, where a major report was launched on the occasion of COP26 in Glasgow.** Lastly, it is worth mentioning that more and more international organizations and projects turn to ERRA with cooperation prospects and the Association will definitely explore this field in the years to come.

With all that happened in 2021, I am confident to admit that ERRA is universally prepared to carry on providing quality outputs and added value for its members in all conditions. As a conclusion, I would like to wish us all an equally productive 2022, that would however be marked by more stable commodity & electricity prices combined with an ever-increasing resistance to the virus and all other mishaps.

A handwritten signature in blue ink, appearing to read 'Maia Melikidze', with a horizontal line underneath.

Maia Melikidze

ERRA Chair

Commissioner, Georgian National Energy and Water Supply Regulatory Commission

## Warm greetings to all ERRA Members and Partners on behalf of the ERRA Strategic Advisory Board!



Activities of our Association in 2021 brought a broad range of topics and issues discussed from the sector and attracted attention of a diverse groups of participants from many regions. **ERRA initiated internal discussion about such paramount topics as energy transition and climate change, which marks an important turn towards the core trends that drive the evolving energy markets.**

As tomorrow's energy architecture is shaped not only by new technologies but also by a lot of uncertainty and unpredictability, energy regulators need to address a rising number of challenges for the market and its balance. The future is in fact happening now which means that **important changes such as new market models, innovations and sources start playing an increasingly important role, also in the emerging ERRA markets.** All of that takes place in the 2021/22 volatile electricity and gas pricing context of chaotic COVID recovery which makes things even more complicated.

While 2021 was still about adapting and paving way for stable online cooperation, **the following years will require further creativity, action and flexibility from both ERRA and its members** to address the above-described issues.

This is paradoxically a good moment for ERRA as it can show leadership in terms of providing guidance and answers to its members. **The Association has all the capacity to become a lighthouse in the stormy waters of increasingly complex energy system and market landscape while also take into consideration of gender equality in energy world.** The Strategic Advisory Board stands firm with ERRA, in order to make that lighthouse send clear and encouraging signals.

A handwritten signature in blue ink, appearing to read 'Alparslan Bayraktar'.

Dr. Alparslan Bayraktar  
Chairman of the ERRA Strategic Advisory Board  
Deputy Minister, Ministry of Energy and Natural Resources of Turkey

# OUR VALUES AND PEOPLE

## What We Do

The Energy Regulators Regional Association (ERRA) is an inter-institutional non-profit organisation unified by the shared goal of its regulatory members to improve energy regulation. ERRA's focus is to bring together effective energy regulators with the necessary autonomy and authority to make positive change.

## How We Work

Support strengthening and improving the regulatory framework.

### OUR MISSION

### OUR VISION

Being a reference point for practise and knowledge in the constantly evolving regulatory environment.

## Our Core Values



Increasing the exchange of information among members and partners



Improving energy regulation through education



Facilitating research and innovation

## Our History

ERRA was inaugurated on December 11, 2000 during the founding General Assembly meeting in Bucharest by the following founding members: Albania, Armenia, Bulgaria, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia and Ukraine. ERRA was created with a mandate to improve energy regulation, foster the development of stable energy regulatory bodies and ultimately to indirectly contribute to energy markets integration. ERRA was established and institutionalized with financial support from the U.S. Agency for International Development (USAID) from 1999-2008.



## ERRA Presidium



**Maia Melikidze**  
ERRA Chairperson

from September 2020 (ERRA Presidium Member from May 2016)  
Commissioner  
**Georgian** National Energy and Water Supply Regulatory Commission



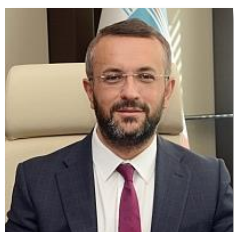
**Pál Ságvári**  
ERRA Vice-Chair

from September 2020  
Vice-President for International Affairs  
**Hungarian** Energy and Public Utility Regulatory Authority



**Sajid Akram**  
Presidium Member

from June 2021  
Additional Director General  
National Electric Power Regulatory Authority of **Pakistan**



**Ahmet Çağrı Çiçek**  
Presidium Member

from September 2020  
Commissioner  
Energy Market Regulatory Authority of **Turkey**



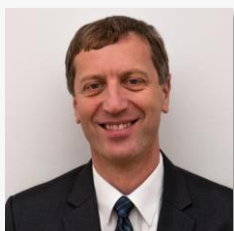
**Maria Manicuta**  
Presidium Member

from April 2009  
Director, Network Tariffs and Investments Monitoring Department  
**Romanian** Energy Regulatory Authority



**Andrijana Nelkova-Chuchuk**  
Presidium Member

from September 2020  
Commissioner  
Energy and Water Services Regulatory Commission of **North Macedonia**



**Dietmar Preinstorfer**  
Presidium Member

from September 2020  
Director of International Relations  
Energie-Control of **Austria**

## ERRA Strategic Advisory Board



**Alparslan Bayraktar**  
Chairman of the Board

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



**Walter Boltz**  
Vice-Chairman of the Board

Senior Adviser in European Energy  
Member of EU ACER's Board of Appeal  
Former Executive Director, E-Control, **Austria**



**Ashok Bhargava**  
Member of the Board

Senior Consultant and Advisor in Clean Energy – Climate Change  
Former Director for Energy and Chair of the Energy Sector Group, Asian Development Bank (ADB)



**Colette Honorable**  
Member of the Board

Partner, Reed Smith LLP  
Former NARUC President  
Former FERC Commissioner, **United States of America**



**Mariusz Swora**  
Member of the Board

Owner, Swora Legal  
Former ERRA Vice-Chairman  
Former President, Energy Regulatory Office of **Poland**

ERRA Committees and Working Group Leaders



**Zviad Gachechiladze**  
EMER COM Chair

First Deputy Director of Electricity Department

**Georgian** National Energy and Water Supply Regulatory Commission



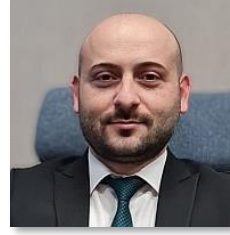
**Harald Proidl**  
RE COM Chair

Director, Renewables and Energy Efficiency E-Control, **Austria**



**Graeme Lindsay Sims**  
EMER COM Vice-Chair

Executive Director Regulatory and Supervisory Bureau for Electricity and Water of **Dubai, UAE**



**Mustafa Çelebi**  
RE COM Vice-Chair

Group Head Energy Market Regulatory Authority, **Turkey**



**Mehmet Kürkçü**  
NG COM Chair

Foreign Relations Group Head

Energy Market Regulatory Authority, **Turkey**



**Margus Kasepalu**  
CP WG Chair

Head of Department of Energy and Infrastructure

**Estonian** Competition Authority



**Viesturs Kadiķis**  
NG COM Vice-Chair

Deputy Director of Energy Department, Head of Tariff and Infrastructure Division Public Utilities Commission, **Latvia**



**Viktor Szilágy**  
CP WG Vice-Chair

International Expert for Energy

**Hungarian** Energy and Public Utility Regulatory Authority



## ERRA Secretariat



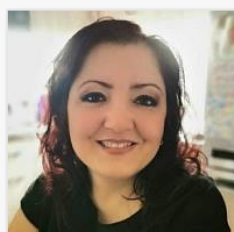
**Krisztina Kasza**  
Program Director  
Head of ERRA Secretariat

Krisztina has been leading the Secretariat since its creation. She is the main initiator, coordinator and decision maker on the Secretariat's end. Her organizational and managerial acumen has driven ERRA's success and expansion for over 21 years.



**Ardian Berisha**  
Regulatory Specialist

Ardian has been assisting the technical part of ERRA's work since 2017. His contributions mainly regard tariffication issues. Ardian has however showed his extensive expertise in a range of other topics, projects and reports – all of which represent the true added value of the Association.



**Anikó Kiss**  
Senior Program Manager

Anikó is the most senior employee of the Secretariat after Krisztina. She is the 'kind spirit' of the team. Her outstanding interpersonal skills have many times laid foundation for excellent relations that the Secretariat enjoys with ERRA members and partners. Anikó coordinates the work of Electricity Markets and Economic Regulation Committee.



**Valéria Farkas**  
Senior Program Manager

Valéria has been contributing to the work of ERRA since 2007. Her vast organizational experience brings about calmness and decisiveness, which makes her a reliable and supportive colleague to all the team. Valéria is coordinating the work of Renewable Energy Committee.



**Krisztina Csombor**  
Senior Program Manager

Kriszta has been with the Secretariat since 2013. Her hardworking and conscientious attitude makes her the key person in many ERRA's undertakings. She is also the main IT and graphic design virtuoso of our team. Kriszta coordinates the work of the Customer Protection Working Group.



**Kacper Jarosz**  
Project Manager

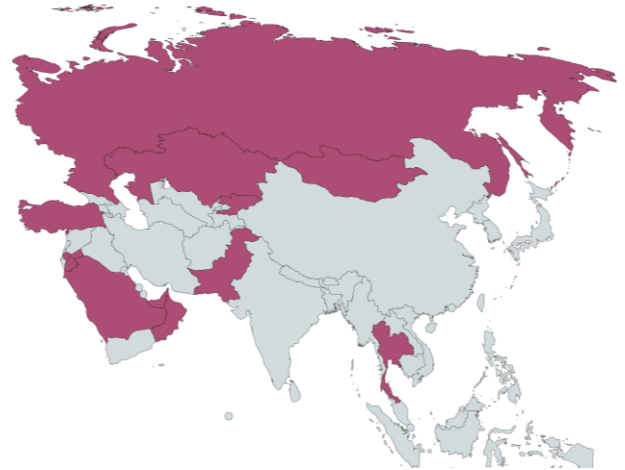
Kacper is ERRA's youngest member of the team and has been with the Secretariat since 2019. He is a central figure in the majority of Secretariat's activities and leads project management and report writing tasks for the organization. In addition, Kacper coordinates the work of the Natural Gas Committee and often serves as a Master of Ceremonies in ERRA's public events.

## Where We Work – Our 48 Member Organizations in Different Regions



- **Albanian** Energy Regulatory Authority
- Public Services Regulatory Commission, **Armenia**
- Energie-Control, **Austria**
- **Azerbaijan**: Tariff (Price) Council; Azerbaijan Energy Regulatory Agency
- **Bosnia and Herzegovina**: State Electricity Regulatory Commission; Regulatory Commission for Energy in Federation of Bosnia and Herzegovina; Regulatory Commission for Energy of Republic of Srpska
- Energy and Water Regulatory Commission, **Bulgaria**
- **Croatian** Energy Regulatory Agency
- Energy Regulatory Office, **Czech Republic**
- **Estonian** Competition Authority
- Energy Regulatory Commission, **France**
- **Georgian** National Energy and Water Supply Regulatory Commission
- **Hungarian** Energy and Public Utility Regulatory Authority
- Energy Regulatory Office, **Kosovo\***  
(\*This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.)
- Public Utilities Commission, **Latvia**
- National Energy Regulatory Council, **Lithuania**
- National Energy Regulatory Agency, **Moldova**
- Energy and Water Services Regulatory Commission, **North Macedonia**
- Energy Regulatory Office, **Poland**
- **Romanian** Energy Regulatory Authority
- Federal Antimonopoly Service, **Russian Federation**
- Energy Agency, **Serbia**
- Regulatory Office for Network Industries, **Slovakia**
- Energy Market Regulatory Authority, **Turkey**
- National Energy and Utilities Regulatory Commission, **Ukraine**

- Energy and Mineral Regulatory Commission, **Jordan**
- Committee on Regulation of Natural Monopolies under the Ministry of National Economy of **Kazakhstan**
- State Agency for Fuel and Energy Complex Regulation at the Government of **Kyrgyzstan**
- Energy Regulatory Commission, **Mongolia**
- Authority for Public Services Regulation, **Oman**
- National Electric Power Regulatory Authority, **Pakistan**
- **Palestinian** Electricity Regulatory Council
- Electricity & Cogeneration Regulatory Authority, **Saudi Arabia**
- Energy Regulatory Commission, **Thailand**
- **United Arab Emirates**: Regulatory and Supervisory Bureau for Electricity and Water of **Dubai**; **Abu Dhabi** Department of Energy



- Electricity and Gas Regulatory Commission, **Algeria**
- Electricity Sector Regulatory Agency, **Cameroon**
- **ERERA**: ECOWAS Regional Electricity Regulatory Authority
- Gas Regulatory Authority, **Egypt**
- **EREA**: Energy Regulators Association of East Africa
- Public Utilities Regulatory Commission, **Ghana**
- Energy Regulatory Authority, **Mozambique**
- **Nigerian** Electricity Regulatory Commission

- **Peru's** Regulatory Agency for Investment in Energy and Mining
- National Association of Regulatory Utility Commissioners, **United States of America**



<h1>JAN</h1>	 <p>1<sup>st</sup> Online Training: <b>Regulatory Tools for Capital Expenditure Review and Assessment</b></p>	<h1>FEB</h1>	 <p>2<sup>nd</sup> Webinar: <b>Impact of COVID-19 on the Energy Sector</b></p>
 <p>1<sup>st</sup> Online Training: <b>Introduction to Regulation of Flexibility in the Power Sector</b></p>	<h1>MAR</h1>	 <p><b>Region-Specific Regulatory Workshop: EURASIA (1<sup>st</sup>)</b></p>	 <p><b>International Women's Day Celebration</b> with welcoming remarks by Kadri Simson, European Commissioner for Energy</p>
 <p>ERRA Regulatory Story of the Month: <b>Polish Offshore Wind</b></p>	<h1>APR</h1>	 <p><b>Region-Specific Regulatory Workshop: MENA (2<sup>nd</sup>)</b></p>	 <p><b>2021/1 Newsletter Publication</b> incl. ERRA Member Portrait by CREG Algeria and 27 members' news</p>
<h1>MAY</h1>	 <p>1<sup>st</sup> Webinar on <b>Regulation of LNG Supply and Terminals</b></p>	 <p>Joint Webinar with Energy Exemplar on <b>Planning for Renewable Integration</b></p>	 <p>1<sup>st</sup> Webinar: <b>Women in the Energy Sector – My Career Story</b></p> <ul style="list-style-type: none"> <li>• Colette Honorable, USA</li> <li>• Nino Enukidze, Deputy Minister, Georgia</li> </ul>
<h1>JUN</h1>	 <p>Tailor-Made Online Capacity Building Program for the World Bank Group (1<sup>st</sup> edition) on <b>Fundamentals of Energy Markets</b></p>	 <p>Webinar Series on Energy Market Surveillance I: <b>Fundamentals of Enforcement and Abusive Practices</b></p>	 <p>ERRA Regulatory Story of the Month: <b>Dubai Creates a Regulatory Regime for District Cooling</b></p>

<h1>JUL</h1>	 <p>Joint Webinar with Energy Exemplar on <b>The Impact of Regulation on driving Renewable Growth across Africa</b></p>	<h1>SEP</h1>	 <p>9<sup>th</sup> ERRA Online Seminar on <b>Energy Policy and Regulation for High-level Policy Makers and Commissioners</b></p>
 <p>2<sup>nd</sup> Webinar: <b>Women in the Energy Sector – My Career Story</b></p> <ul style="list-style-type: none"> <li>• Ms. Paula Conboy</li> <li>• Ms. Annette Verschuren</li> <li>• Ms. Audrey Zibelman</li> </ul>	 <p>Tailor-Made Online Capacity Building Program for the World Bank Group (2<sup>nd</sup> edition) on <b>the Role of Markets in Decarbonized Future Power Systems</b></p>	 <p>Webinar Series on Energy Market Surveillance II: <b>Regulators and Market Participants</b></p>	<h1>OCT</h1>
 <p>1<sup>st</sup> Online Training: <b>Understanding the Basics of Energy Trading</b></p>	 <p>20<sup>th</sup> Anniversary Interview</p> <p>2021/2 Newsletter Publication incl. E-Control Austria Anniversary Interview and updates from 30 member regulators</p>	<h1>NOV</h1>	 <p>ERRA Report on <b>Member Regulators' Role &amp; Engagement in National Climate Action Goals</b></p>
 <p>1<sup>st</sup> Webinar on <b>Hydrogen Outlook for the Energy Sector</b></p>	 <p>Tailor-Made Online Capacity Building Program for the World Bank Group (3<sup>rd</sup> edition) on <b>Regional Markets and Transmission Regulation</b></p>	 <p>1<sup>st</sup> ERRA Hybrid Meetings in Budapest, Hungary: <b>Joint Committee Meeting on Smart Metering Regulation</b></p>	 <p>1<sup>st</sup> ERRA Hybrid Meetings in Budapest, Hungary: <b>ERRA Chairmen Meeting</b></p>
<h1>DEC</h1>	 <p>Webinar Series on Energy Market Surveillance III: <b>Supervisory Tools and Practices</b></p>	 <p>1<sup>st</sup> Online Training: <b>Setting the Weighted Average Cost of Capital (WACC)</b></p>	 <p>1<sup>st</sup> Online Workshop on <b>Effective Communication in the Public Sector</b></p>

## Publications

### ERRA Report



#### ERRA Member Regulators' Role & Engagement in National Climate Action Goals

- Regulators' mandates towards national climate action plans/goals;
- Specific regulatory engagements (roles, decisions, achievements, plans) in the area of decarbonization;
- Anticipated challenges and/or obstacles hindering decarbonisation;
- Current or future role in carbon pricing schemes.
- *Conclusions and recommendations by Dr. Péter Kaderják, Former ERRA Chairman*

### ERRA Renewable Energy Committee



#### Status Quo Report: Renewable Energy Sources and ERRA Members

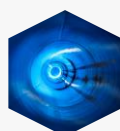
- Background and role of NRAs;
- The contents and results of the survey;
- The share of RES in total electricity production.

### ERRA Natural Gas Markets and Economic Regulation Committee



#### Status Quo Report: 2020 NG COM Introductory Survey Results

- Detailed information regarding ERRA gas markets;
- Their level of liberalization;
- Regulatory regime characteristics.



#### Benchmarking Report: Capacity Allocation Mechanisms and Congestion Management Procedures at Selected Gas Interconnection Points

- Capacity allocation mechanisms;
- Congestion management procedures;
- Cooperation Among TSOs;
- The role of the regulators.

### ERRA Customer Protection Working Group



#### Status Quo Report: ERRA Customer Protection Working Group

- NRAs and their jurisdiction;
- Retail markets of electricity and natural gas;
- Customer protection.



#### Benchmarking Analysis: Available Price Comparison Tools (PCTs) among ERRA Members

- Aimed to detect availability and features of PCTs as prerequisite for efficient electricity and gas retail markets functioning.

## Publications

### Regulatory Story of the Month



#### [Polish Offshore Wind](#)

- The March regulatory story bases on the news from Poland where the bill on promoting electricity generation from offshore wind farms came to force.



#### [Dubai District Cooling](#)

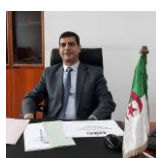
- June 2021 regulatory story derives from the Dubai's Emirate news on the new resolution that sets out basis for District Cooling regulatory oversight.



#### [Albanian Balancing Market](#)

- September 2021 regulatory story describes the first months of the new Albanian Balancing Market (ABM) and the rules that govern its operation.

### ERRA Newsletter: Members' News



#### [Spring Edition \(2021/1\)](#)

- Exclusive interview with Mr Rachedi Menadi, President of CREG Algeria about the most urgent regulatory issues, including e.g., power losses and RES penetration;
- Updates from 27 member regulators.



#### [Autumn Edition \(2021/2\)](#)

- Exclusive interview with Dr. Wolfgang Urbantschitsch, Executive Director of E-Control, on the occasion of the 20th anniversary of the Austrian regulator;
- Updates from 30 member regulators.

### ERRA Tariff Database



#### [ERRA Tariff Database Report on 2020 quarterly and annual data](#)

- Quarterly wholesale and end-user prices (covering natural gas and electricity for 2019 Q3 until 2020 Q4);
- Annual data on revenue determinants for regulated entities, such as:
  - WACC for Electricity and Gas;
  - Electricity network charges;
  - Natural Gas network charges;
  - Electricity and Gas efficiency.

### Documents and Video Presentations



#### [ERRA E-Library](#)

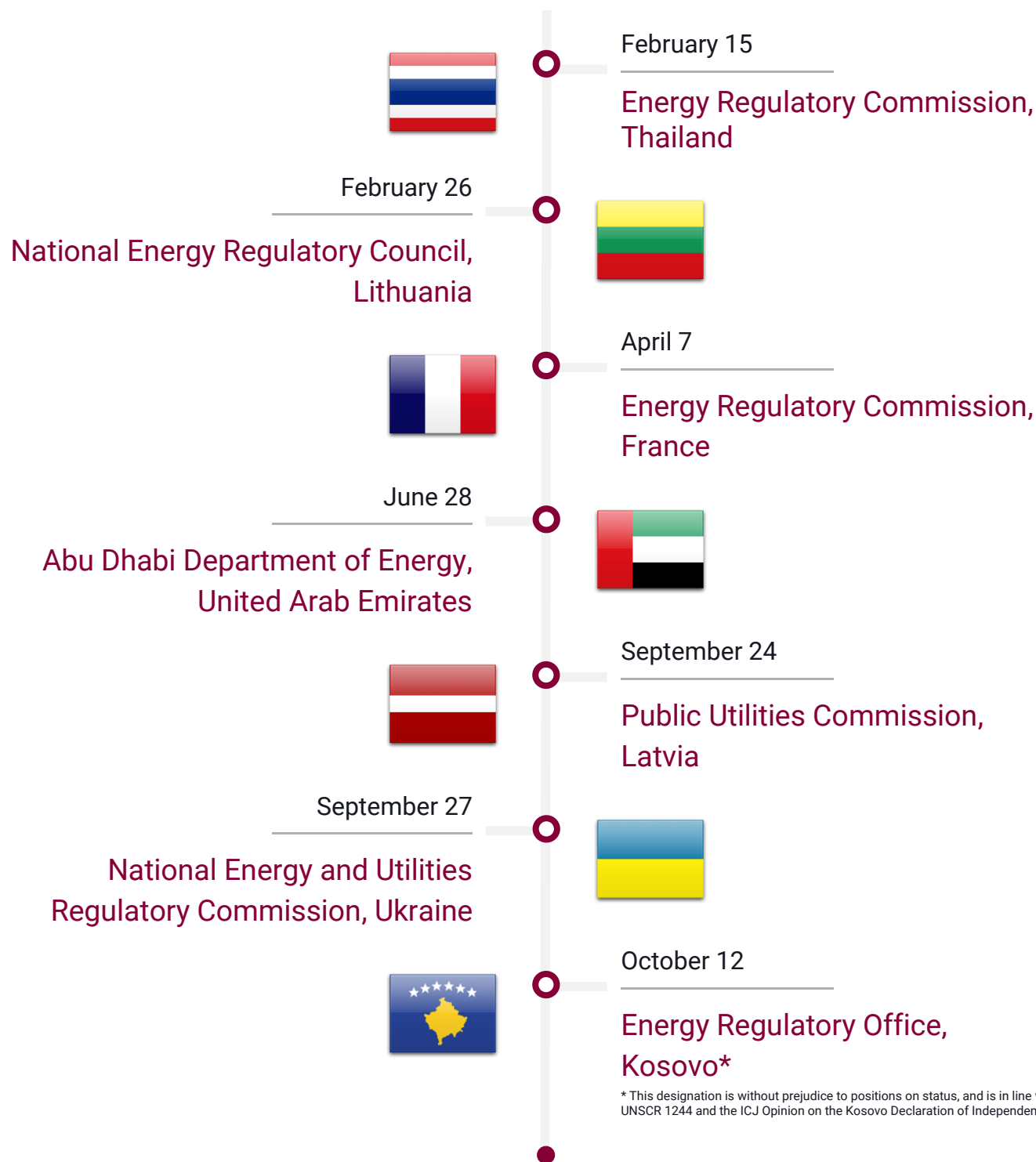
- Visit our comprehensive online library bringing together resources on various regulatory issues from technical issue papers, benchmarking reports, sector analysis and podcasts produced by ERRA and its partner organisations.

## Bilateral Meetings with Member Organisations

The meetings are a new initiative by the Secretariat that aims at identifying current needs and priority working areas of a given ERRA Member in order to better reflect on them in the annual workplan, particularly in technical work and trainings.

'Bilaterals' are conducted between a given ERRA Member's management, delegated Committee/ Working Group members and contact persons on the one side and ERRA Chairs and Secretariat representatives on the other.













In parallel, the new format allows to face up the main impairment of the pandemic for ERRA – social distancing and consequently deteriorating integration within the Association. The meetings facilitate the establish of closer Secretariat-Members relations and identification of contact points on both sides.



\* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

to be continued in 2022

Webinars and Online Workshops

<p>Webinar: <b>Impact of COVID-19 on the Energy Sector</b></p> <p><b>170</b></p> 	<p>Program: <b>International Women's Day</b></p> <p><b>55</b></p> 	<p>Webinar: <b>Regulation of LNG Supply and Terminals</b></p> <p><b>140</b></p> 	<p>Webinar: <b>Women in the Energy Sector: My Career Story</b></p> <p>2 events</p> <p><b>90</b></p> 
<p>Webinar: <b>Energy Market Surveillance I: Fundamentals of Enforcement</b></p> <p><b>190</b></p> 	<p>Joining Webinar: <b>Impact of Regulation on Driving Renewable Growth across Africa</b></p> <p><b>50</b></p> 	<p>Region-Specific Regulatory Workshop: <b>MENA</b></p> <p>2 events</p> <p><b>75</b></p> 	<p>Region-Specific Regulatory Workshop: <b>EURASIA</b></p> <p>2 events</p> <p><b>90</b></p> 
<p>Webinar: <b>Energy Market Surveillance II: Regulators and Market Participants</b></p> <p><b>190</b></p> 	<p>Webinar: <b>Hydrogen Outlook for the Energy Sector</b></p> <p><b>245</b></p> 	<p>Webinar: <b>Energy Market Surveillance III: Supervisory Tools and Practices</b></p> <p><b>140</b></p> 	<p>Workshop: <b>Effective Communication in the Public Sector</b></p> <p><b>50</b></p> 



More than **1450 participants** in total.



## Online Training Courses in 2021





### Regulatory Tools for Capital Expenditure (CAPEX) Review and Assessment

 55  2 weeks (January 18 – 28)

Integration of CAPEX in the price control ▪ Methods for assessment of CAPEX ▪ CBA – Role and application ▪ Mathematical techniques for investment decisions ▪ Assets utilisation, stranded assets and regulatory policy ▪ Excel modeling





### Introduction to Regulation of Flexibility in the Power Grid

 43  3 weeks (February 22 – March 12)

Role of flexibility in the power system ▪ Technology and market trends for flexibility, costs and responsiveness comparison ▪ Drivers of flexibility demand at distribution and transmission level ▪ Flexibility technology and market trends ▪ Barriers to flexibility ▪ Regulatory solutions to barriers



### Power System Basics for Non-Engineers

 33  3 weeks (March 22 – April 7)

Brief introduction to power system ▪ Terminology & basics ▪ Power generation ▪ Transmission system ▪ System operation ▪ Distribution system ▪ Reliability and quality issues ▪ Smart grids & smart meters ▪ Consumption ▪ Role of consumers ▪ Demonstrations





### Summer School: Introduction to Energy Regulation

 30  4 weeks (June 14 – July 9)

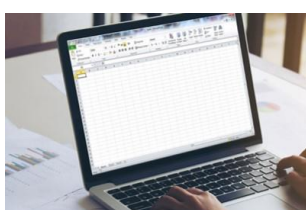
Role and functions of the regulator ▪ Regulatory challenges ▪ Price and tariff regulation in the electricity markets ▪ Electricity market trends and drivers ▪ Drivers of energy transition: Decarbonization, renewable technology change and RES auctions ▪ Competition and regulation in the gas markets ▪ Practical exercises



### Seminar: Energy Policy and Regulation for High-Level Policy Makers and Commissioners

 12  2 weeks (September 7 – 17)

Role and functions of the regulator ▪ Power sector fundamentals ▪ How power markets operate ▪ How natural gas markets operate ▪ Price regulation ▪ Energy transition ▪ Stakeholder engagement and communication



### Electricity Tariff Setting: A Practical Guide

 24  4 weeks (September 20 – October 15)

Economics of price regulation ▪ Wholesale electricity markets and RES support schemes ▪ Building up the allowed revenues ▪ Integration of CAPEX in the RAB ▪ WACC ▪ Efficiency analysis in allowed revenue determination ▪ End-user tariff structures and design ▪ International examples of tariff setting

## Online Training Courses in 2021



### Understanding the Basics of Energy Trading

22 3 weeks (October 25 – November 12)

Energy markets' liberalization ▪ Organization of trading activities with elements of market surveillance ▪ Risks and volatility ▪ Trading process ▪ Types of markets and products ▪ Trading platforms ▪ Accounting logic and principles ▪ Screen trading simulations



### Setting the Weighted Average Cost of Capital (WACC): A Practical Guide

46 2 weeks (November 29 – December 1)

Introduction to the WACC and the cost of debt ▪ The capital asset pricing model ▪ Efficient gearing levels and cost of equity ▪ Real vs. nominal WACC and RAB indexation ▪ Excel Exercise: Calculating the WACC

## Capacity Building on Request

**Fundamentals of Energy Markets**

55

1

**Role of Markets in Decarbonized Future Power Systems**

170

2

**Regional Markets and Transmission Regulation**

200

3

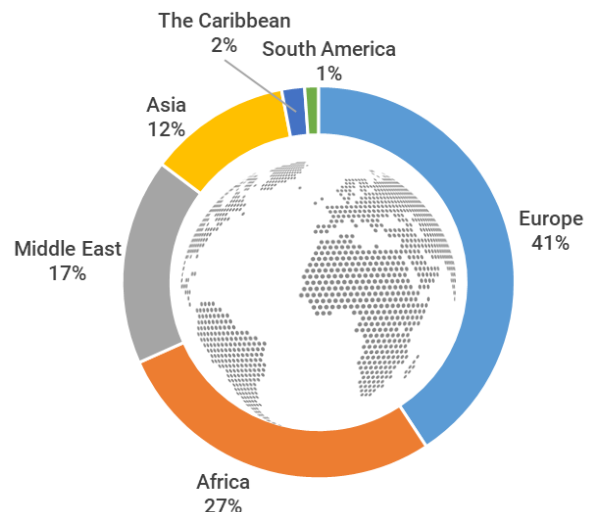


More than **650 students** in total attended ERRA courses in 2021.

### Composition of Participants



### Overall rating of ERRA training courses



## Meet Some of Our Expert Speakers



**Abdulwahhab Al Hinai**  
Oman



**Ardian Berisha**  
ERRA



**Hans-Arild Bredesen**  
Norway



**David Boyd**  
USA



**Sushanta Chatterjee**  
India



**Cristiano Francese**  
Italy



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**Konstantin Petrov**  
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## ERRA Certified Energy Regulator Programme

ERRA developed the Certified Energy Regulator (CER) training certificate to indicate that participants in ERRA courses have achieved a set level of fluency in the regulatory field.



The certification system is supposed to acknowledge those ERRA training participants who have successfully participated in minimum three different training programs organized by ERRA. In order to receive the certificate, participants should collect at least 30 credits within 3 years.



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Over the past months we have seen sustained levels of heightened energy prices in Europe. A combination of factors related to weather, economic recovery and supply disruptions led to very significant increases in gas prices, dragging power prices upwards as well. Regulators and policymakers sought to find answers on the drivers behind the surge in prices as well as possible solutions going forward.

To discuss these and other issues related to the energy crisis, ERRA had a chance to chat with Dr. James Henderson, Director of the Energy Transition Research Initiative at the Oxford Institute for Energy Studies.



**Dr. James Henderson**

Director

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Energy Transition Research Initiative  
Oxford Institute for Energy Studies

**Dr. Henderson thank you for finding the time to chat with us. In the second half of 2021 we witnessed an unprecedented increase in energy prices. What were the main contributors behind this surge in prices on the gas sector?**

The surge in gas prices has been caused by a number of contributory factors. Initially, a cold spell in the 2020/21 winter caused gas storage levels in Europe to be reduced to low levels by the end of March 2021. Normally, these would have been replenished during the spring/summer period with both pipeline imports and LNG imports. However, the global economic rebound as the COVID-19 pandemic eased meant that gas demand rose much more rapidly than during a normal summer period. This was especially the case in Asia (and particularly China) where LNG demand was pulled away from Europe. In addition, Gazprom was also replenishing storage and meeting high demand in Russia, meaning that it did not have as much gas as it needed to replenish its own storage in Europe. The situation was then further compounded by low wind speeds in Europe in the late summer/early autumn, leading to a further increase in gas demand in the power sector. Finally, unexpected outages in a number of LNG plants led to supplies being restricted.

As a result, Europe entered the 2021/2022 winter period with storage levels well below the seasonal norms, pushing prices up. The situation was then further complicated by two other factors. Firstly, Russia reduced sales to Europe relative to previous years. Although it has met all its contractual commitments, it has ceased all short-term trading on European hubs and its own Electronic Sales Platform. This lower supply has also increased prices, and this has been further exacerbated by the political crisis surrounding Ukraine, which has raised concern about a possible cut in Russia transit supplies. More LNG has flowed to Europe as a result of the high prices caused by these factors, but not enough to completely balance the supply-demand situation and allow storage levels to recover to seasonal norms.

The rally in the gas market had a direct impact on the electricity prices as well, leading to discussions about the drivers behind the rise in electricity prices and raising concerns about the electricity market model and price-setting mechanism. What is your take on that discussion?

Electricity prices in Europe rose substantially in 2021, mainly reflecting the increasing price of natural gas, which often sets the electricity spot price paid to all generators. This has led to a political debate among EU Member States about whether the current wholesale electricity market design – pay as clear – is to blame and needs to be reformed or replaced. One camp, including northern European countries, argues that the current market design is fundamentally sound and they do not wish to see major reform, especially changes that would introduce greater government intervention. Another camp, including countries from southern Europe, argue that the market design needs to be changed, with government intervention clearly on the agenda. Spain, in particular, favours an approach that would pay different amounts to specific sub-marginal technologies.

The immediate debate reflects concern about rising spot prices and their link to final prices. The Commission has rightly pointed to a tool kit of temporary measures to address it, including transfers to the most vulnerable consumers, fiscal policy relaxation, recycling of EU ETS revenues (which have risen steeply, partly due to a demand shift from natural gas to coal as a consequence of rising natural gas prices). So the case for serious reform of the market design to solve short-term problems is unlikely to prosper. However, the mid to long-term concern is that the wholesale prices will be too low to justify investments because the penetration of renewables with near-zero marginal costs will make the pay-as-clear market unworkable. Furthermore, a market design that assumes dispatchable plant makes no sense in a world where virtually all generation will be intermittent and depend on uncontrollable weather patterns. Some OIES papers have argued that fundamental market reforms are likely to be needed to pave the way for a decarbonised system. The concern about high prices will no doubt be part of the policy debate - there is a need to reduce volatility of final prices and reliance on fossil fuels. But that debate should focus on establishing a market design that it is fit for purpose in a decarbonized and increasingly decentralized electricity system. It will be interesting to follow Germany's position on this. They have traditionally been part of the northern camp, but there are indications that they might be rethinking their approach.

**Such price increases can represent strong signals to increase investments in the sector. How should governments and regulators respond in a manner which provides safeguards for customers but does not distort these price signals?**

It is vital that governments allow prices signals to incentivise investment in the gas sector or supply shortages will continue. Although investment cycles are long, and so only limited supply from projects already under development will merge this year, it is nevertheless important that developers of pipeline gas and LNG supply see that they will be able to make a return on future investments that will take 4-5 years to develop and will have a lifespan of 20 years or more. Unfortunately, high prices are not the only criterion now, as the future of gas in the energy transition is also a factor that is of concern to developers who question whether their gas will be needed over the 20-30 year lifespan of their future projects. Nevertheless, it remains vital that price signals are seen and reacted to.

This does not mean that customers should just be left exposed, however, especially poor customers. Price caps are an obvious route for politicians as they have an immediate effect, but clearly they distort market signals and do not encourage efficiency or a reduction in demand. A better outcome is to allow prices to rise but to provide subsidies for customers in the most need. Unfortunately this does take longer to organise, and so is not an ideal response in an emergency, but over the longer term it is the better outcome. In reality a mixture of rising price caps and subsidies is probably the optimal outcome, with the latter replacing the former over time, as well as investment in efficiency in order to encourage demand-side management.

### **What is your view on the short-term outlook and where are prices likely to settle next winter?**

The answer to this question is dependent on a number of different assumptions. If we have a cold spell either in the first or fourth quarters of the year then prices could surge to record levels again. However, if we have normal, or even mild, weather, then the situation will be more manageable. We expect storage levels in Europe to be low at the end of winter, but with increased LNG supplies expected they should be refilled over the summer, on the assumption that demand growth in Asia slows as economies return to more normal levels of expansion following the dramatic rebound in 2021. The degree to which storage can be filled by the end of the summer will be a strong determinant of price levels next winter.

However, much will then depend on Russian supply. If the Nord Stream 2 pipeline is approved, and if the Ukraine situation calms down, then increased Russian exports can also help to provide a more balanced market. If neither of these things happen then the supply problem remains. In either case though, we do not expect a decline in gas prices back to levels seen in 2019/2020 (recalling that 2020 price levels were historical lows). Gas prices will remain relatively high through the year as the market starts to re-balance – the only question remains how high. In a positive scenario they retreat significantly from current record levels. In a negative one they stay very high throughout the year.

### **What were the lessons learned in terms of European energy security of supply and what are the long-term policy actions which can mitigate the risk of such events occurring again in the future.**

Europe has created a liberalised gas market which responds to the forces of supply and demand. Over the past decade this has, overall, benefitted customers and provided lower prices than those in monopolised markets where prices are determined by linkage to oil. However, over the past 12 months we have seen what can happen in a market in exceptional circumstances – when supply is tight, or demand rises rapidly, prices rise. The physical needs of consumers can be met, but at a price. There have been no physical cut-offs, but customers have had to pay much more for supplies, perhaps suggesting that security of supply now needs to be re-interpreted, not just as security of physical flows but also as security of a 'reasonable' price level (however that may be defined).

The EU has rules in place to meet the challenge of physical shortages. The solidarity mechanism ensures that household customers will be supplied from neighbouring countries if necessary in an emergency, but we have not reached that point in Europe this winter. Some commentators have also mentioned that rules for mandatory gas storage should also be introduced, but this would clearly be incompatible with market forces and would distort the price signals discussed above. It would also raise interesting questions around who would decide when gas in storage can be used and at what price.

A more pressing question for regulators should therefore be how to protect low income consumers from high prices and, as discussed in the earlier answer, the best outcome would be to avoid price caps but to provide subsidy payments where they are most needed. This would take time to implement, but should be a key focus for policy-makers once the immediate focus on the current crisis is over. ■

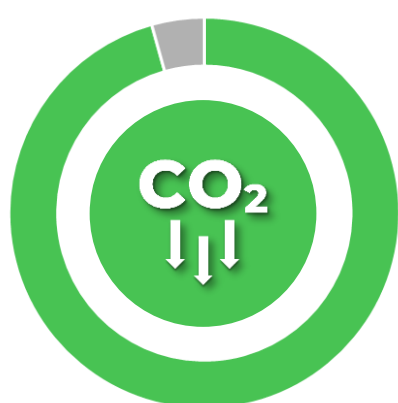


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The Oxford Institute for Energy Studies is a world leading independent energy research institute specialising in advanced research into the economics and geopolitics of the energy transition and international energy across oil, gas and electricity markets.

## Select Data from ERRA Publications

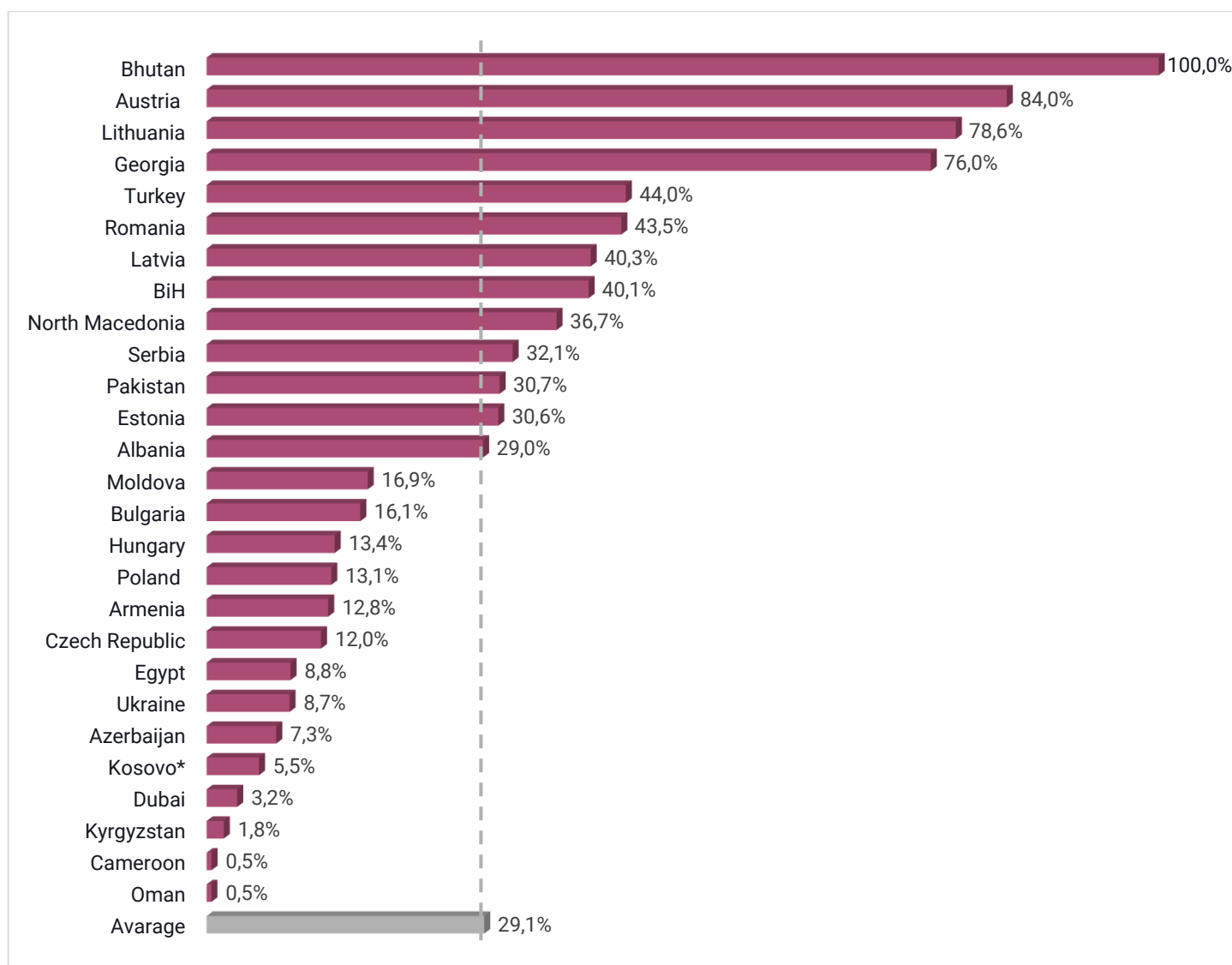
Existence of official/ approved national targets to reduce greenhouse gas emissions in 23 member countries



- Yes**
  - Algeria
  - Armenia
  - Austria
  - Azerbaijan
  - Bulgaria
  - Egypt
  - Estonia
  - France
  - Georgia
  - Hungary
  - Latvia
- Other**
  - Lithuania
  - Moldova
  - North Macedonia
  - Oman
  - Pakistan
  - Palestine
  - Peru
  - Poland
  - Romania
  - Turkey
  - UAE (Dubai)

Source: ERRA Report: "ERRA Member Regulators' Role & Engagement in National Climate Action Goals"

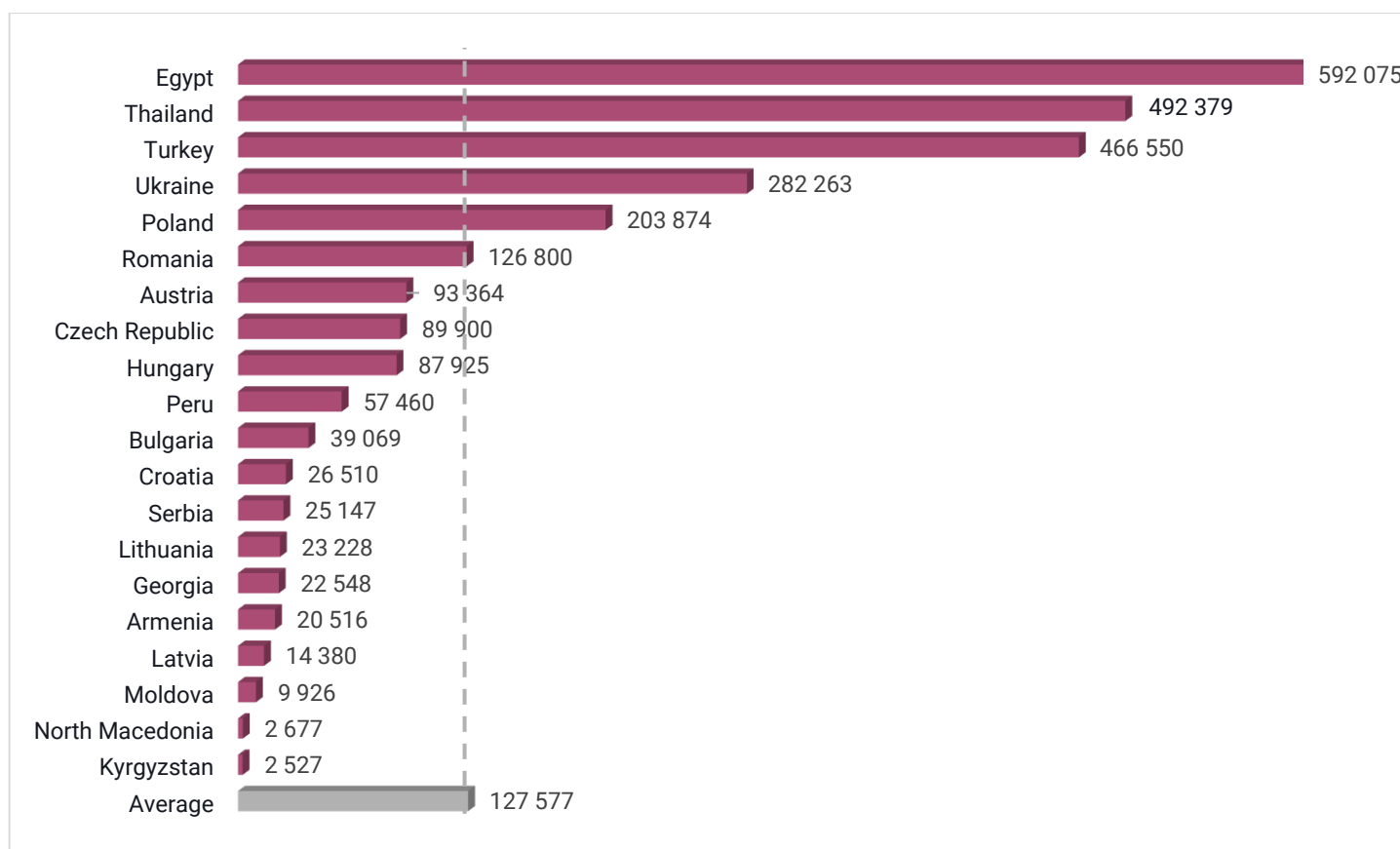
Share of RES in 27 member countries in total electricity production in %



Source: Renewable Energy Committee Status Quo Report: Renewable Energy Sources and ERRA Members

## Select Data from ERRA Publications

Annual natural gas consumption (average of 2017 – 2019, GWh) in 20 member countries



Source: *Natural Gas Markets and Economic Regulation Committee Status Quo Report: 2020 NG COM Introductory Survey Results*

Complaint handling in 22 member organisations

NRA's jurisdiction to handle complaints



- **Yes (17):** Albania, Algeria, BiH (RERS), Czech Republic, Estonia, Georgia, Kosovo\*, Lithuania, Moldova, North Macedonia, Oman, Peru, Romania, Saudia Arabia, Turkey, Ukraine, UAE (Dubai)
- **Yes, but to a limited extent (4):** BiH (FERK), Hungary, Latvia, Poland
- **No (1):** BiH (SERC)

Ways of complaint handling

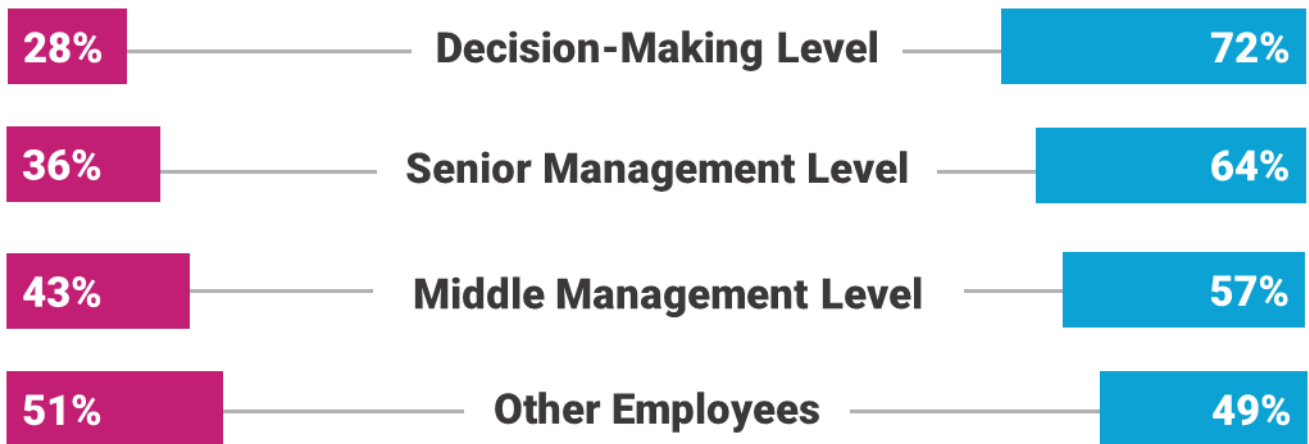
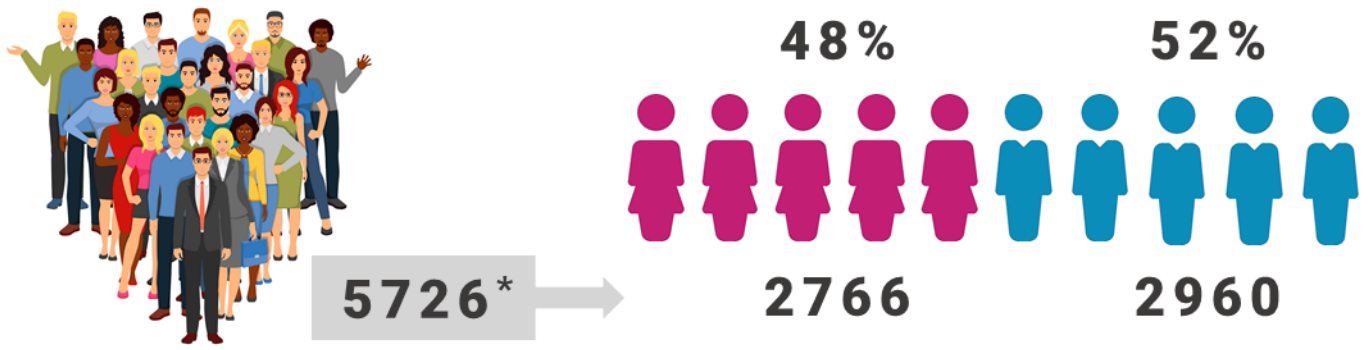


- **Consumers must turn to their service providers before they can file a complaint against them at the NRA (16):** Albania, Algeria, BiH (FERK, RERS), Georgia, Hungary, Kosovo\*, Lithuania, Moldova, North Macedonia, Oman, Peru, Romania, Saudi Arabia, Turkey, UAE (Dubai)
- **Consumer complaints can be directly addressed to the NRA (5):** Czech Republic, Estonia, Latvia, Poland, Ukraine

Source: *Customer Protection Working Group Status Quo Report*



Women's Representation in 38 ERRA Member Organisations



**2 Chairwomen leading ERRA Member Organisations**



**3 Women in ERRA Presidium including ERRA Chairperson**


**\*Total number of staff based on answers from 38 member organisations on July 2021:** Albania, Algeria, Armenia, Austria, Azerbaijan, Bhutan, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Egypt, Estonia, France, Georgia, Hungary, Kosovo\*\*, Kyrgyzstan, Latvia, Lithuania, Mongolia, Mozambique, North Macedonia, Oman, Palestine, Peru, Poland, Romania, Serbia, Saudi Arabia, Slovakia, Thailand, Turkey, Ukraine, USA


\*\*This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.




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