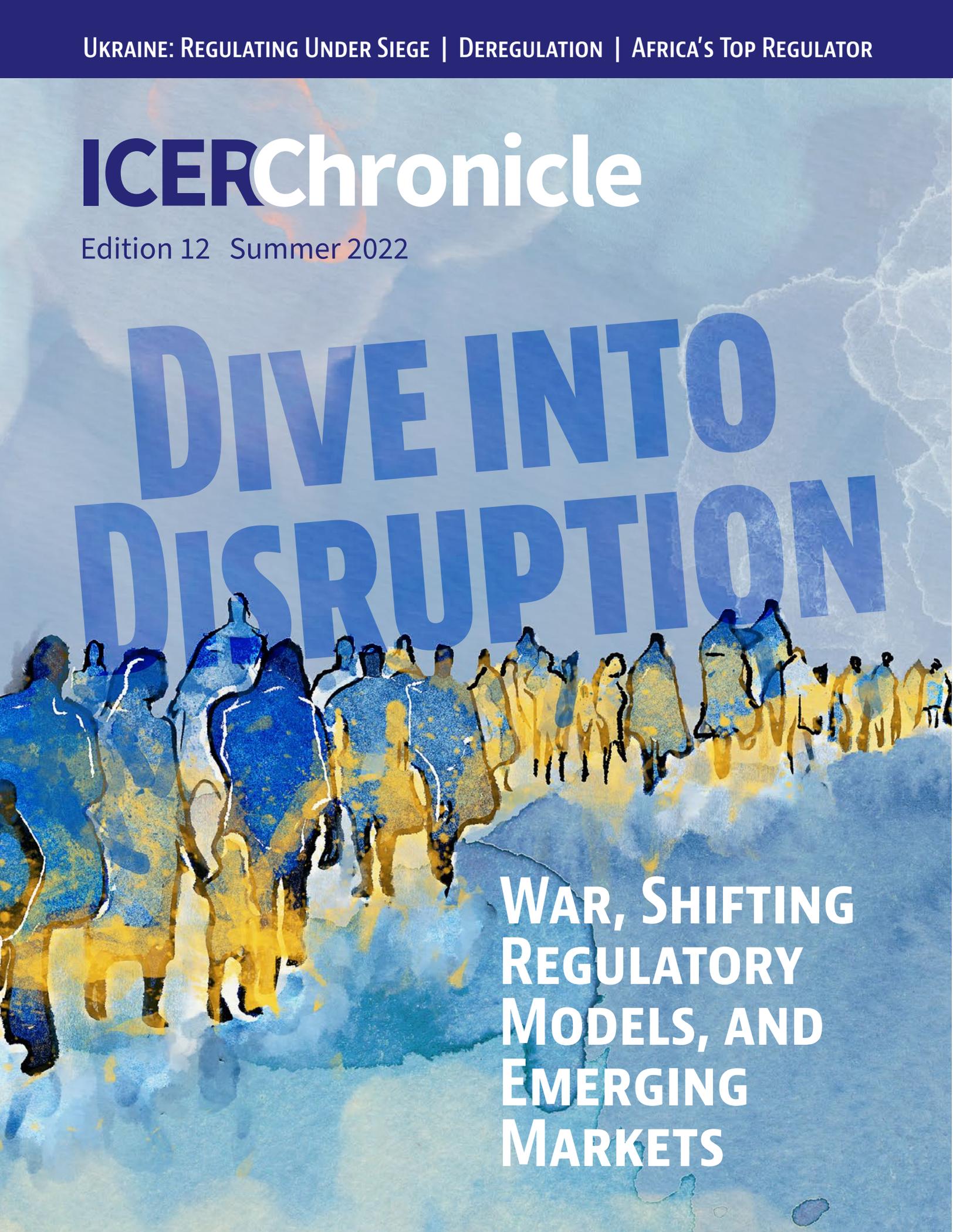


ICERChronicle

Edition 12 Summer 2022

DIVE INTO DISRUPTION



WAR, SHIFTING
REGULATORY
MODELS, AND
EMERGING
MARKETS

Chair David Danner

Vice-Chairs Annegret Groebel and
David Morton

Steering Committee Members

Benn Barr, AMEC; Henry Kachaje,
AFUR; André Pepitone da Nóbrega,
ARIAE; David Morton, CAMPUT;
Annegret Groebel, CEER; Maia
Melikidze, ERRA; Petrit Ahmeti,
MEDREG; Judith Jagdman, NARUC;
Dela Britton, OOCUR; Henry Kachaje,
RERA; Samdrup Thinley, SAFIR; Daniel
Kiptoo Bargaroria, RAERESA

Chair of Women in Energy

Kathleen Riviere-Smith

Vice-Chair of Women in Energy

Andrea Lenauer

ICER Coordinator

Francisco Salazar

ICER Chronicle

Editor

Kate Griffith

Associate Editor

Regina L. Davis, NARUC

Regional Associate Editors*

Victoria Mollard, AEMC

Jackie Ashley, CAMPUT

Regina L. Davis, NARUC

Daphné Lacroix, MEDREG

Rashmi Somasekharan Nair, SAFIR

Lee Okombe, RAERESA

Martina Schusterová, CEER

Contributing Writers

David Morton, CAMPUT; Monica
Gattinger, CAMPUT; Slobodan Vidović,
CEER; Karem Mahmoud, MEDREG;
Molly Knoll, NARUC

Design Director

Lisa Mathias, NARUC

*Regional associate editors are chosen and volunteered by regional associations to project manage and edit *ICER Chronicle* submissions from their region. One regional editor is named per region, though regional editors may have their own editorial teams involved in this effort. If you are interested in representing your region in this effort and do not see your region listed, please contact your regional organization to be nominated. For questions, contact Associate Editor Regina L. Davis at rdavis@naruc.org.

Monica Gattinger



Monica Gattinger is director of the Institute for Science, Society and Policy, full professor at the School of Political Studies, and founding chair of Positive

Energy at the University of Ottawa. Monica is an award-winning researcher and highly sought-after speaker, strategic advisor, and media commentator on energy politics, policy, regulation, and governance. She is a fellow at the Canadian Global Affairs Institute and serves on boards and advisory committees for multiple energy organizations.

David M. Morton



David Morton was first appointed as a commissioner at the British Columbia Utilities Commission in Vancouver, Canada, in 2010 and was later appointed as the

chair and CEO in December 2015. As chair and CEO, David is responsible for delivering on the vision of the BCUC—to be a trusted and respected regulator who contributes to the well-being and long-term interests of British Columbians. David is also vice chair of ICER, an executive member of CAMPUT and chair of its International Relations Committee, and co-vice chair of the NARUC Committee on International Relations.

Regional Members Who Contributed to this Issue

North America

CAMPUT

Canada's Energy and Utility Regulators

NARUC

National Association of Regulatory Utility Commissioners

Africa

MEDREG

Mediterranean Energy Regulators

RAERESA

Regional Association of Energy Regulators for Eastern and Southern Africa



Karem Mahmoud



Karem Mahmoud has been CEO of the Egyptian Gas Regulatory Authority (GASREG) since its creation in 2017. He is responsible for setting policies and

regulations related to gas market activities as well as developing a liberalized gas market based on international practices. He is also vice president of the Association of Mediterranean Energy Regulators (MEDREG) and chair of the ICER's Virtual Working Group on Gas and other Fuels. Prior to joining GASREG, Karem was chair and managing director of the Egyptian Natural Gas Company and was CEO of the Egyptian Company for Liquefied Natural Gas from 2010 to 2013.

Molly Knoll



Molly Knoll joined the Maryland Public Service Commission as a senior commission advisor in 2018. Her portfolio includes a variety of issues impacting utility

distribution systems, grid modernization, and competitive retail supply. She also serves as the chair of the NARUC Staff Subcommittee on Consumers and the Public Interest. She graduated magna cum laude from the University of Maryland School of Law and, after her clerkship, spent five years with the Maryland Office of People's Counsel representing residential ratepayer interests.

Slobodan Vidović



Slobodan Vidović is an official at the German national regulatory authority Bundesnetzagentur. Since 2021, he has worked on issues related to dynamic

regulation with other members of national regulatory authorities in CEER's Regulatory Benchmarking Workstream. He has a degree in business administration from the Baden-Württemberg Cooperative State University.

Europe

CEER

Council of European Energy Regulators

MEDREG

Mediterranean Energy Regulators

ERRA

Energy Regulators Regional Association

Asia

SAFIR

South Asia Forum for Infrastructure Regulation

Other Regional Members of ICER

AFUR African Forum for Utility Regulators

AEMC Australian Energy Market Commission

EAPIRF East Asia & Pacific Infrastructure Regulatory Forum

ARIAE Ibero-American Association of Energy Regulators

OOCUR Organization of Caribbean Utility Regulators

RERA Regional Electricity Regulators Association of Southern Africa

From the Chair



As a regulator, there are days when I bemoan the complexity of a proceeding, grumble about difficult stakeholders, or complain about a pending deadline.

Kostiantyn Ushchapovskyi has put me in my place.

Ushchapovskyi is the chair of NEURC, the National Energy and Utilities Regulatory Commission of Ukraine. He joined the commission in December of 2021 and was confirmed as chair just two days before the Russian army invaded the Ukraine this year. Since then, it has been his challenge to regulate essential electric, district heating, natural gas, water, and wastewater services in the face of brutal military aggression.

The courage and steadfastness of Chair Ushchapovskyi and his colleagues, like that of so many Ukrainians living through this horrific and barbaric war, is an inspiration to me and, I am sure, to energy regulators around the world. Amid war, he is working to maintain electric and utility service to people whose lives have been disrupted and who struggle to pay their bills.

He continues his commitment to end Ukraine's dependence on Russian gas, disconnecting from synchronous operation with Russian and Belarus, and shifting his country's energy future to integration with Europe, which offers greater security and transparency. He is already working to rebuild infrastructure destroyed by the Russian military.

I am grateful to Chair Ushchapovskyi for sitting down with ICER during this historic time and sharing his experience of regulating during wartime (see page 11). I am reminded that we should not take for granted the peace or prosperity we may enjoy, nor dwell on petty annoyances when others face existential challenges.

We are less than a year away from the 8th World Forum on Energy Regulation, convening in March 21–24, 2023, in Lima, Peru.

This Forum, hosted by OSINERGMIN, the Peruvian Supervisory Agency for Investment in Energy and Mining, and developed in coordination with ICER, is the leading international conference on energy regulation, and brings together key energy industry players, high-level policymakers, academics, and regulators from all over the world to engage in strategic and meaningful conversations.

This is the time to mark your calendar and make plans to join us in Lima. The conference theme—"The Energy Transformation Challenge"—is particularly timely. ICER's International Committee will be finalizing the agenda in the coming months, and I invite you to check the ICER website for updates or contact Beatriz Estrada Moreno of OSINERGMIN, at bestrada@osinergmin.gob.pe, for more information.

With this issue, Kate Griffith steps down as the editor in chief of the *ICER Chronicle*. Kate has been the *Chronicle's* editor for two years, and my colleague at the Washington Utilities and Transportation Commission for five. She has been a superb editor, writer, and energy analyst, and played a major role in maintaining the *Chronicle* as an informative and professional publication for our increasingly important organization. Kate is moving on from my agency and taking her considerable talents to work on energy decarbonization issues for a nonprofit consulting organization based in California. I am grateful to her for the work she has done both for ICER and for the citizens of the state of Washington, and I hope you will join me in wishing her the best in her new endeavors.

David Danner, ICER Chair, Chair of the Washington Utilities and Transportation Commission

FEATURES

- 11** **PERSEVERANCE**
Regulating Under Siege
*Interview with Ukrainian Regulator Kostiantyn Ushchapovskyi
compiled and edited by Kate Griffith*
- 18** **DISRUPTION**
Regulators: Disrupted by Change or Disruptors Bringing Change?
Monica Gattinger and David Morton
- 22** **MARKETS**
Egypt Embarks on Gas Market Reform to Become a Regional Energy Hub
Karem Mahmoud
- 27** **DYNAMIC REGULATION**
Energy Regulators Promote Dynamic Regulation to Boost Innovation
Slobodan Vidović
- 30** **DEREGULATION**
Restructuring a Restructured Market
Molly G. Knoll

DEPARTMENTS

- 2** Letter from the Chair
- 4** Energy Essentials
- 36** Who's Who

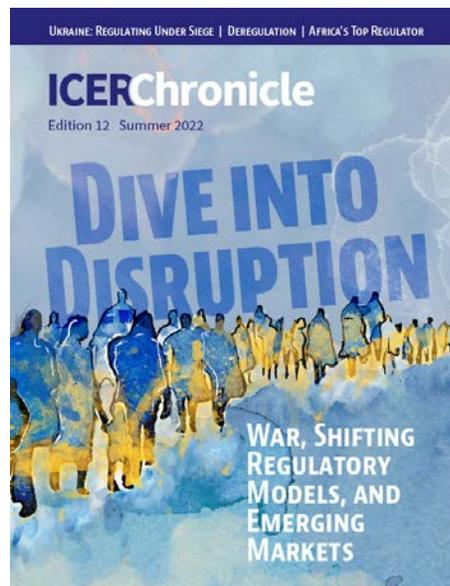
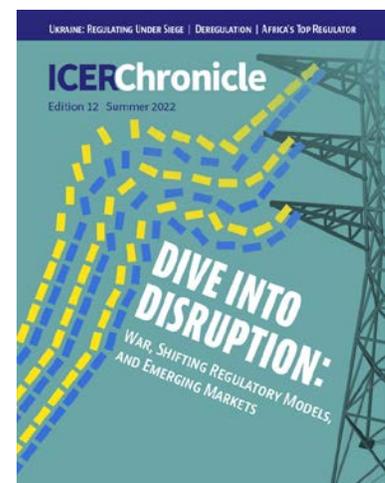


Illustration on the cover: pronoia - stock.adobe.com



Tower illustration: DimKa - adobestock.com

We loved our cover contender so much we still wanted you to see it!

CEER News Briefs

European Sustainable Energy Week Kicks off in September

The European Sustainable Energy Week (EUSEW) brings together public authorities, private companies, NGOs, and consumers to promote initiatives to save energy and move toward renewables for clean, secure, and efficient energy.

The 2022 edition of EUSEW will take place 26-30 September in a hybrid format. Participants and speakers will be able to participate online or onsite in Brussels, Belgium, as COVID-19 restrictions allow.

Under the theme "Going green and digital for Europe's energy transition," the event will include high-level policy discussions, performance awards, and the third annual European Youth Energy Day, as well as opportunities for bilateral meetings, exhibition stands, and other networking activities.

For more information, visit: <https://www.eusew.eu/>.

Comic Book Boosts Energy-Saving Habits Among Youth in Eastern Europe

When they discover an old cabin in the woods, four friends and their pet hamster meet Professor Slate, a scientist who teaches them about the negative impacts of wasting energy and the positive use of alternative energy-generating methods. Back in their hometown, the small group decides to spread good ideas to save energy to help avoid further damage to the environment and to heal the Earth.

This is the story of *Light Bulb*, a new comic book at the centre of a campaign focusing on increasing younger generations' understanding of energy efficiency. It showcases simple steps and tips to help children develop energy-saving habits—such as switching off unused devices, drying clothes naturally, turning down heating, etc.

The book has been produced in six languages, and copies were distributed at children's schools as extracurricular reading



Courtesy of European Union



Photo: ©European Union



Courtesy of European Union

material. In parallel, EU Neighbours East launched a social media campaign dedicated to developing energy-saving habits in younger generations by focusing on Ozzy the Hamster and featuring the main ideas of the comic book.

The campaign was developed in the framework of the EU4Energy Programme, a EU-funded programme fostering the low carbon and clean energy transition in countries of the Eastern Partnership, including Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova, and Ukraine. Download the book at <https://www.ceer.eu/annual-regional-visibility-campaign>.

■ CEER's COVID-19 Group Concludes Its Work

The COVID-19 pandemic has been a health crisis of a magnitude not seen in a century. Not only did it have major social and economic repercussions, it also severely impacted the energy sector.

In June 2020, European regulators in CEER set up an ad hoc working group to study the effects of the crisis on energy systems in a cross-cutting manner. Chaired by Jean-Laurent Lastelle of the French regulatory authority, the group has been a forum for exchanging experiences and hearing from experts from the regulator community, the European Commission, the International Energy Agency, and the Organisation for Economic Co-operation and Development.

After almost two years, the group has now completed its mandate. The workgroup has published two reports on the impact of the COVID-19 pandemic on electricity and gas systems in Europe. They notably focus on the effects of lockdowns on energy demand and prices, as well as on measures taken in different jurisdictions to support consumers. Overall, the group concluded that the energy sector demonstrated its resilience throughout the pandemic.

More information and the two reports can be found here: <https://www.ceer.eu/ad-hoc-covid-19-group1>

■ Regulatory Energy Transition Accelerator Kicks Off Work

Launched during COP26, the accelerator begins its work.

The first steering committee meeting of the Regulatory Energy Transition Accelerator (RETA) took place on 9 May 2022.

RETA was launched at COP26 as a platform for sharing and co-creating knowledge on decarbonisation for energy regulators. Twenty-two energy regulators from across the world, covering every continent, pledged to partner with the International Energy Agency (IEA), International Renewable Energy Agency (IRENA), and the World Bank, as well as NGOs including Energy Innovation, the Regulatory Assistance Project, and RMI to achieve this goal.

The RETA Steering Committee is composed of energy regulators from Great Britain, Australia, California, Egypt, France, Georgia, Kenya, Peru, Saint Lucia, and Singapore. Regulators sit on the committee for two-year renewable terms, together with the IEA, IRENA, and the World Bank. The steering committee is chaired by Jonathan Brearley, CEO of Great Britain's regulator Ofgem.

During its first meeting in May, the committee discussed and adopted the RETA guidelines and rules as well as the activities for the first year.

The goals of RETA were confirmed as accelerating:

- flexible, renewable-based systems;
- regulatory frameworks to deliver the energy transition;
- network planning for wide scale electrification;
- regional interconnection; and
- a fair and inclusive energy transition

These objectives are to be delivered through workshops, bilateral and multilateral exchanges, bespoke technical assistance, and reports and studies.

RETA held a public event on June 21 2022.

All ICER members are encouraged to become participants in RETA activities. More information can be found on their website, www.retatheaccelerator.org, or by reaching out to admin@retatheaccelerator.org.

MEDREG News Briefs

■ Medreg's 2021 Reports Are Available

MEDREG's latest reports, which are the result of MEDREG working group efforts undertaken in 2021, are now available in a new format. The reports address topics as varied as institutional governance, security of energy supply, gas infrastructure interoperability, energy efficiency, digitalisation, hydrogen, consumer information and access to digital services, and distribution networks.

The reports demonstrate the potential for regulators to contribute to the low-carbon energy transition, to attract investments, and foster interoperated energy systems and make recommendations to regulators for making such contributions.

Access the 2021 MEDREG reports [here](#).

■ The French Regulator Welcomed the Egyptian Gas Regulator for a Study Visit on Third Party Access

From February 21 to February 23, MEDREG's French member, Commission de Régulation de l'Énergie, welcomed its Egyptian counterpart, GASREG, for a

three-day study visit in Paris. The mission addressed the main questions and possible answers that characterise the application of third-party access in the French gas sector and, more broadly, in the European context. The study visit provided GASREG an example case study for the application of third-party access rules and procedures in Egypt.

Read more about the visit [here](#).

■ Protecting the Rights of Vulnerable Consumers: New Video on MEDREG's Consumer Working Group

In MEDREG, the protection of household consumers is a prerequisite for economic and social well-being. The MEDREG Consumer Working Group has long been identifying and promoting best practices across Mediterranean countries for energy billing, access to information, transformation of energy markets, and better quality of service.

But too often, the role of regulators in protecting consumers is not well known. To bridge this information gap between consumers and their regulators, MEDREG produced an animated video to explain the positive role that energy regulation plays on consumers in Mediterranean countries, focusing particularly on the protection of vulnerable customers.



Courtesy of MEDREG

French and Egyptian regulators met in Paris in February as part of a study visit.

The video also introduces the MEDREG Consumer Working Group and the ways in which it contributes to higher consumer protection standards and best practices by guiding MEDREG members on feasible, sustainable, and adapted measures for their respective countries.

Watch the video [here](#).

Working With Med-TSO To Enable Electricity Exchanges in the Mediterranean

On February 9, MEDREG and the Association of the Mediterranean Transmission System Operators held a joint webinar titled “Enabling electricity exchanges and trading in the Mediterranean” in order to develop a common technical and regulatory framework that makes electricity exchanges and trading possible between Mediterranean shores.

Read more about the work [here](#).

Download the workshop and summary at the following links: [focus on the workshop](#) and [summary](#).



Courtesy of MEDREG

Gastech 2022 Exhibition and Conference, September 5-8 2022, Milan, Italy

This year, MEDREG is partnering with Gastech for a four-day exhibition and conference addressing the natural gas, hydrogen, and low-carbon solutions conversations. The four-day exhibition and conference will gather energy ministers, CEOs, policy makers, business leaders, engineers, innovators, and disruptors for discussion and mutual learning.

Read more [here](#).



British and Moroccan Energy Regulators Announce Closer Ties To Move Faster To Net Zero

In February in London, the Office of Gas and Electricity Markets of the United Kingdom and the National Electricity Regulatory Authority of the Kingdom of Morocco signed a Joint Statement of Intent to Cooperate with the aim of strengthening bilateral cooperation between the two regulators.

Read more [here](#).

Technical Summary: The Digitalisation of Energy Markets and the New Role of Consumers

Published in March 2022, this manual is for regulators who are looking to enhance their grids and services. It summarises the content and knowledge shared by renowned experts during the October 2021 MEDREG training titled “Regulatory Implications of the Digitalisation of Energy Markets and the New Role of the Consumers.”

Download the summary [here](#).

Complementing the detailed technical summary mentioned above, MEDREG also published a snapshot that presents the implications of energy sector digitalisation for regulators. Published in February 2022, it shows the beneficial role that digitalisation plays in fostering the energy transition and incorporating renewables to the energy systems. It also presents the cybersecurity risks that digitalisation creates, proposing solutions to regulators.

Download the snapshot [here](#).

Snapshot: Energy Efficiency and E-Mobility in the Mediterranean

In April 2022 MEDREG also published an overview of existing energy efficiency policies and the e-mobility landscape in the Mediterranean region, presenting different strategies from MEDREG member countries.

The short analysis offers key points and a set of recommendations meant for regulators and policy-makers to improve energy system efficiency and expand the development of e-mobility.

E-mobility, or electric mobility, refers to the electrification of transportation broadly to include cars as well as bikes, scooters, electric busses, electric trucks, and more.

The snapshot is based on the MEDREG Renewable Energy

Sources and Energy Efficiency Working Group report titled "Energy efficiency programmes and electric mobility in Mediterranean countries."

Download the snapshot [here](#).

NARUC News Briefs

NARUC's International Department Resumes Travel

As of 2022, NARUC's International Programs department has resumed traveling internationally. Like other organizations, NARUC converted its domestic and international activities from in-person to virtual in March 2020 when COVID-19 developed into a global pandemic.

The first in-person activity occurred in February 2022 in Abuja, Nigeria. It consisted of an activity funded by the United States Agency for International Development (USAID) and Power Africa, which was part of a cost-reflective tariff training series for the Nigerian Electricity Regulatory Commission (NERC). As a result of the activity, NERC staff acquired a foundational understanding of how the weighted-average cost of capital fits in to conventional cost of service regulation, how investors analyze utility regulation, and more.

In June 2022, NARUC staff and volunteers traveled to Athens, Greece, for a USAID-funded activity on the benefits of regional electricity market integration with the Energy Regulatory Authority of Albania, the Energy Regulatory Office of Kosovo, and the Energy and Water Services Regulatory Commission of North Macedonia, which was co-hosted by the Regulatory Authority for Energy of Greece. Regulators gathered to discuss further developing their respective markets and integrating them with the rest of Europe, which will ultimately result in increased energy security and greater resource adequacy. NARUC staff and volunteers also traveled to Bosnia and Herzegovina in June 2022 for a Women in Energy Leadership training. Supported by USAID Bosnia and Herzegovina (BIH) and organized by NARUC in partnership with USAID's Energy Policy Activity, this training supported women in the BIH energy sector in building a comprehensive skillset that will contribute to their overall leadership capabilities and evaluating structural/institutional considerations.

NARUC has a slate of future travel planned for this summer and fall. For example, activities funded by the U.S. Department of State are set to take place in Central America on integrated resource and resilience planning, in Mongolia on grid modernization, in Angola on pricing options for renewable energy, and in Cambodia on generation planning. With this in mind,



Courtesy of NARUC.

NARUC training on cost-reflective tariffs in Nigeria.

NARUC's International Programs department is always looking for energy regulatory experts who are interested in providing support to foreign regulators through problem solving and results-based assistance.

To receive calls for volunteers and volunteer applications, please contact Erin Hammel (ehammel@naruc.org) and Sarah Stiles ([sstiles@naruc.org](mailto:ssstiles@naruc.org)) and request to be added to the volunteer solicitations email distribution list. NARUC also regularly sends activity calendars through this distribution list, which include topics, dates, and NARUC staff points of contact for each upcoming activity.

NARUC Launches Spanish-Language Training Videos to Support Greater Access and Education on Utility Regulatory Topics

In June, NARUC announced the release of Spanish-language training videos on topics including an introduction to regulation, distribution systems and planning, bulk power system issues, innovations in electricity system modeling, smart grid and electric vehicle interoperability and more. The videos are intended to serve as a resource for public utility commissions in their efforts to increase stakeholder access and education for Spanish-speaking audiences on relevant regulatory issues.

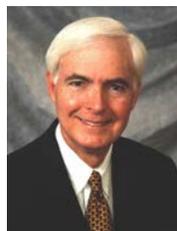
"These videos are invaluable for staff training and outreach in our community," said Commissioner Lilian Mateo-Santos of the Puerto Rico Energy Bureau. "This is particularly timely as we undergo grid modernization efforts in Puerto Rico and want to ensure that our stakeholders are well-informed."

This effort was initiated in partnership with the U.S. Department of Energy and the National Regulatory Research Institute (NRRI) in 2021 to support the Puerto Rico Energy Bureau and provides more than five dozen interpreted videos. Eight videos from NRRI's Regulatory Training Initiative provide a comprehensive introduction to the principles and practice of regulation, which includes concepts of economics, engineering, finance, and law. Thirty-two videos from the Distribution Systems and Planning Series, developed in partnership with DOE's Grid Modernization Laboratory Consortium through Lawrence Berkeley National Laboratory, offer a suite of trainings on electric distribution systems, utility system planning and approaches to engagement in integrated distribution planning. The Smart Grid Learning Modules were developed with support from the National Institute of

Standards and Technology and consist of 22 short videos covering the economics, operational considerations, and role of regulators for interoperability. Lastly, the Innovations in Electricity Modeling Training Series offers seven videos developed through the National Council on Electricity Policy and the National Laboratories on modeling approaches for the future grid.

Read the complete announcement in [English](#) and in [Spanish](#).

Co-Founder of WFER and Past NARUC President Jim Sullivan Passes Away



On May 4, 2022, NARUC lost a well-respected friend and leader with the passing of Commissioner-Emeritus Charles James (Jim) Sullivan III, former head of the Alabama Public Service Commission.

He was elected as NARUC president in 1998 and had a leadership style that was both dynamic and full of integrity. His 25 years of service as a commissioner reflected a tenure that enriched and advanced the mission of utility regulation, having left an indelible mark on a host of committees, councils and boards, such as the Committee on Critical Infrastructure, the Board of Governors for Argonne National Laboratory and the Advisory Council for the Electric Power Research Institute. Sullivan also served as president of the Southeastern Association of Regulatory Utility Commissioners and the NARUC Board of Directors.

His commitment to utility regulation extended internationally, as a founder of the World Forum on Energy Regulation, which convenes regulators, policymakers, researchers and others from around the world to address critical matters of energy through strategic and meaningful conversations.

After he concluded his tenure as a commissioner, he remained a staunch supporter and friend to NARUC through active participation in NARUC events and initiatives. He served for many years as the vice president of the NARUC commissioners emeritus organization and was instrumental in keeping former commissioners connected and engaged.

"Jim Sullivan was a dear friend to many of us—he was thoughtful, intelligent, and very approachable," said

NARUC Executive Director Greg White. “Whether you were a new commissioner, a current regulator or a former commissioner, he had the ability to listen, to make a human connection and provide wise counsel.”

“Commissioner Sullivan was a treasure to NARUC, the state of Alabama, and to the broader community of regulators,” said NARUC President Judith Williams Jagdmann. “His commitment to service was exemplary—at the state level as a commissioner, in his local community through his volunteerism and philanthropy, and also through his ability to build a sense of community with his peers.”

A [resolution](#) in honor of his service was passed by the NARUC Board of Directors in 2008. His memorial service was held on May 7, and his obituary is available [here](#).

SAFIR News Briefs

■ SAFIR Presents its 20th Core Course

SAFIR organized its flagship 20th Core Course conducted by the Indian Institute of Management Ahmedabad in association with Gujarat Electricity Regulatory Commission February 21–23. The Core Course covered topics related to policy, legal, and regulatory challenges as well as international experience in power, electricity market design, renewable energy policies, transportation, and telecom. The classes were held online in a program of 10 sessions.

■ SAFIR Hosts Infrastructure Conference

SAFIR and USAID’s South Asia Regional Initiative for Energy Integration, currently being implemented by Integrated Research and Action for Development (IRADe), jointly organized a conference titled “Power Markets to Facilitate Enhancement and Integration of Renewable Energy” on February 15 and 16. This conference was conducted virtually over a period of two days and was comprised of the following working sessions:

- Renewable energy resource potential in the South Asia region and its optimum utilization
- Status of power markets in South Asia
- Panel discussion on power markets to facilitate enhancement and integration of renewable energy

■ SAFIR And ERRA Sign MOU for Information Exchange

SAFIR and ERRA (Energy Regulators Regional Association) signed a Memorandum of Understanding (MOU) on March 22. This MOU seeks to further goals to illustrate and outline the broad nature of activities in which participants from the South Asia region may engage and to identify topics for the exchange of information, experiences, and regulatory practices in areas of mutual interest for the electricity sector.

■ SAFIR Conducts Annual Meetings

SAFIR conducted its 28th annual Steering Committee Meeting and its 23rd Executive Committee Meeting on June 8 in New Delhi. The meeting was chaired by Samdrup Thinley, who serves as SAFIR chairperson and CEO of Bhutan Electricity Authority.

■ Retirement OF SAFIR Secretariat Chairperson

P. K. Pujari, chair of India’s Central Electricity Regulatory Commission (CERC) and chair of SAFIR Secretariat, retired on superannuation on June 11 after a successful tenure of four years. Under his leadership, CERC finalised various guidelines and regulations related to cross-border trade of power with neighbouring countries and also augmented the cross-border transmission lines that facilitated increased trade of power with Bhutan, Nepal, and Bangladesh. During Pujari’s tenure, power trade with Myanmar and talks for sub-marine cable connection with Sri Lanka were initiated for the first time.



Courtesy of SAFIR

A memento is presented by Preman Dinaraj, chair of the Kerala State Electricity Regulatory Commission, to P. K. Pujari, chair of CERC, on Pujari demitting office on superannuation.

Regulating Under Siege

Interview compiled and edited by Kate Griffith

Kostiantyn Ushchapovskyi, chair of Ukrainian regulator NEURC, discusses energy and regulatory challenges in Ukraine.

Photo courtesy of NEURC

On February 22, 2022, just two days before the Russian invasion of Ukraine, Kostiantyn Uschapovskyi was confirmed as chair of Ukraine’s National Energy and Utilities Regulatory Commission.

He had served as a commissioner since December of 2021, following a long career as an engineer, energy dispatcher, and advisor to Ukrainian prime ministers and energy ministers. Throughout his career, Uschapovskyi continuously pursued education, culminating in a Ph.D. in economics in 2017. Though it’s hard to conceive of any power sector training that would prepare a commissioner for war early in their leadership, Uschapovskyi has relied on his personal strengths, detailed understanding of power sector engineering and economics, and trust in NEURC’s dedicated staff to lead NEURC through Russia’s military invasion and Ukraine’s defense of Ukrainian land and infrastructure.

Here, Chair Uschapovskyi discusses some of the largest challenges the Ukrainian power sector faces and details how NEURC staff and leadership have continued to serve Ukrainians throughout the war—in unoccupied and in Russian-occupied areas.

First and foremost, our deepest condolences for the challenges Ukraine faces due to Russian aggression. Are you, your loved ones, and the staff of NEURC physically safe from the impacts of the war?

Greetings, thank you for your question. Unfortunately, our interview takes place in a situation where Ukraine is at war, several of our regions are under occupation, and the country is facing serious challenges in almost all areas, and energy is no exception.

Now I and my loved ones are relatively safe, so to speak. As long as hostilities are taking place in the country, martial law has been imposed, and a curfew is in place, it cannot be said with certainty that there is any one safe place in Ukraine. However, in Kyiv we follow certain safety rules, which allow us to work and perform important functions entrusted to the energy regulator. The staff of NEURC has the opportunity to work remotely, using

the modern capabilities of computer technology, in relatively safe places.

You were confirmed as NEURC chair on February 22, two days before Russia invaded Ukraine. Were you aware of, or were you prepared for and briefed about, the invasion when you were confirmed? How did you prepare? How did you react?

Of course, I did not know about the invasion. Like all people of common sense, I did not believe that this was possible until the very last moment. However, the intelligence data and media fields in the times preceding the invasion were quite busy and tense. Somewhere, deep down, we were all worried that something like this might happen. Therefore, it would be incorrect to say that we were not ready for this at all. But we did not think that these events would be of such magnitude, that they would bring about so many deaths, so much destruction, and so much grief and tears.

As for the reaction to this blatant war, first there was a shock, then rejection, denial, and unwillingness to accept reality. Then came the realization that it was necessary to act in the new reality. It was necessary to quickly ensure the coordinated work of NEURC, upon which much depends in the spheres of energy and utilities. It was necessary to consolidate the team around us and decide on the commission’s priority steps under martial law.

How did you imagine your career as chair of NEURC before you were confirmed, and how has that differed from the reality?

I have more than 25 years of experience in the energy sector, with both practical experience working in management positions of state-owned energy companies and theoretical experience in scientific research and lecturing. I have a Ph.D. and a doctoral dissertation under my belt.

Therefore, for my career advance-

ment in the energy sector, I thought it logical to apply for a vacant position with NEURC, an institution that plays one of the key roles in regulating Ukraine's energy. Of course, I also had an action plan, a vision of the energy situation, and proposals and professional beliefs in case I was elected chair of the regulator.

After my colleagues elected me to chair the commission, I planned to gradually implement this plan. However, I had to radically reconsider my strategy with the beginning of the war, because my previous plan for working in this position primarily concerned peacetime operations.

The new conditions, which affect the entire country, require new approaches to literally everything. I first had to change my own perspective, gather all the best of my abilities, recall all my positive experiences, and then focus on setting new priorities for Ukraine's new reality.

Now we can talk about several months of productive work at the head of a government agency during a special period. I hope victory comes soon, and we will be able to return to peacetime work, to restore energy, infrastructure, and utilities. There are a lot of responsibilities ahead.

What skills have you had to lean on during these first months of your tenure as chair of NEURC that are new or different from the skills you honed throughout your career? How are those skills similar, if at all?

I am glad I can rely on my previous experience under these conditions. Systemic thinking, understanding of energy processes and energy markets, soft skills, assertiveness—these are what I found to be crucial in my work.

How did you and NEURC staff respond when Russia first invaded Ukraine?

You probably mean the invasion of 2014, when Russia annexed Ukrainian Crimea and temporarily occupied parts of Donetsk and Luhansk regions. It is an act of aggression that all progressive humanity recognizes—it was then, and so it is now. When one country attacks another, tries to conquer its territory, engages in nuclear terrorism, seizes its nuclear power plants, destroys gas and electricity networks, oil depots, refineries, critical infrastructure, this is beyond good and evil!

Since 2014, the Ukrainian energy sector has finally decided to completely eradicate any energy dependence on Russia. This has become a critical issue for our national security. After 2014, market players refused to buy gas from Russia and started buying it from Europe. In the electricity sector, prompt measures have been taken to disconnect from the synchronous operation with Russia and Belarus. And this was not an easy task, because our energy system was designed and built to operate synchronously with the countries of the former Soviet Union from the very beginning.

Nevertheless, we succeeded. It took seven years of hard work and over 700 million euros of investment to make the Integrated Power System (IPS) of Ukraine self-sufficient, reliable, and ready to comply with all the conditions necessary for synchronous work under European rules.

In the context of Russia's aggression against Ukraine, this has become not just a technical issue, but a political and security issue. I am convinced that Ukraine's security of supply should primarily depend on the national energy system, the system operator, and reliable partners whose work is transparent and market-based.

We understand NEURC has resumed some baseline level of work. How did you manage this logistically between industry and utilities, NEURC, and your various stakeholders?

Since Kyiv has been subject to active shelling, many employees of NEURC's central office left the city, just like most residents did, to relocate with their families, mainly to the western regions of the country. Some of our territorial units are in the areas where combat took place or is still ongoing. Some of the workers were in temporarily occupied territories, so the main question was to ensure their safety and the safety of their families. Nevertheless, the commission had to continue its work even under such conditions.

The experience of working during the pandemic, when the vast majority of the commission's functions were transposed to the online format, helped us organize regulatory operations during the war. Thus, in the first days of the war, staff was already organized. We established remote access to commission management and employee workplaces, and we launched the process of holding NEURC's open meetings using the Zoom platform.

All stakeholders of the energy sector, industry, utilities, etc., have the opportunity to join the meetings of the commission by registering in advance. That is, we have preserved one of the main principles of the regulator: openness, transparency, and public access.

It was also useful that we were already preparing a transition to electronic document management with digital signatures, so even before the war began, we created and tested our system for internal document management. All NEURC staff also obtained their personalized electronic keys. Therefore, they

were able to quickly and efficiently establish internal processes in the commission and interact with other government agencies.

Regarding contact with market participants and consumers, information about the activities of the regulator was made public on all available communication channels: on Facebook, Twitter, Telegram, and the commission's official website.

Of course, we must now pursue a very careful information policy in order to protect our critical infrastructure from enemy attacks. Therefore, for the safety of the Ukrainian energy system, it was necessary to temporarily restrict access to a significant amount of information on the NEURC website. Otherwise, NEURC professes the principles of maximum transparency and openness, and our site has repeatedly been recognized as the most informative among the sites of all official government agencies in Ukraine.

How have NEURC staff been able to function in a war-torn climate?

As I have already said, we had no problems with organizing the work of the NEURC staff under martial law. We just used the experience of working during the pandemic. Everyone was also perfectly aware of their civic and professional duties: One should do what one does best, especially when the state requires one to.

Some members of the NEURC were drafted into the Armed Forces of Ukraine and are now defending our Ukrainian interests and values. They retained their jobs, to which they will return after our victory. However, most colleagues continue working in their places, establishing remote access to their work computers.

Not only open meetings of the NEURC, but also all interdepart-

mental and work meetings, and communication with consumers, stakeholders, and licensees are held online. I repeat: Anyone can contact the regulator, send in their suggestions and comments, participate in open discussions of regulations, and so on.

We did not stop our work for a moment, and worked even when most government agencies were not working.

I think no one even noticed any significant changes. Since the beginning of the war, NEURC has held more than 20 open meetings, approving over 100 decisions of importance to the energy and utilities sectors.

We have continued to maintain close connection with key government institutions, local authorities, public and private energy companies that operate certain energy sectors, energy system and energy market operators, and utilities—that is, with everyone we worked with before the war.

I am convinced that this is the reason we managed to ensure uninterrupted operation of Ukraine's energy system, so that household and non-household consumers, critical infrastructure facilities, the Armed Forces of Ukraine, and the Territorial Defense Forces receive energy resources on time and in full.

According to an April 1 interview with Volodymyr Kudrytskyi, CEO of Ukrainian electricity grid operator Ukrenergo, electricity producers have been struggling to collect payments from customers because more than 1.5 million consumers have been cut off from the grid since the start of the war. In April, there was approximately a 70 percent decrease in collection rates, creating urgent cashflow issues. How is NEURC handling this problem or planning to handle it?

Indeed, there is a significant reduction in the collection rate, including on the Ukraine-controlled territories. This level of reduction threatens the proper functioning of Ukrainian power system.

Truth be told, the situation is extremely complicated, but we are working on mechanisms to resolve it. Simply put, those consumers who can pay—pay. However, those who do not pay are also supplied with electricity and are prohibited from being disconnected.

In addition, under Government Resolution, the regulator provided recommendations to electricity market participants for the duration of martial law to stop the accrual and collection of penalties provided for in the existing agreements.

After martial law, consumers will be obliged to pay for the electricity consumed and services provided. We are also well aware that the majority of the population will not have enough funds to pay for the consumed electricity, so such consumers will be given the opportunity to pay in installments with the appropriate payment schedule.

I was personally pleasantly surprised by our citizens. As you know, where some territories of Ukraine are temporarily occupied, there is already a new “interim city government” of the occupiers. They manage the infrastructure of cities and towns, and establish their own laws and rules. But there's a key detail: Our people, the citizens of Ukraine, live there.

And you know what's surprising? They find the opportunity to pay for the services they consume online. Yes, these are individual cases. But we clearly understand the conditions they are facing now, and we believe this is not about money. Instead, it's about the rejection of invaders. Therefore, I am confident that after our victory, we will rebuild everything quickly, and the

liquidity of our market will be at the European level.

I would like to note that the state continues to provide benefits and subsidies to vulnerable groups.

At the same time, in the current situation, the critical issue in Ukraine is to ensure electricity, gas, water supply, and sewerage to consumers who are in the temporarily occupied territories. Currently 125,000 square kilometers of Ukraine are temporarily occupied, which is about 20.7 percent of our state.

Before February 23, 2022, the area under occupation was three times smaller, about 7 percent. So, you can imagine how enormous the losses are for our market participants, especially on electricity generation. We are acutely aware of the problems of both market participants and consumers, and we are looking for compromises to resolve the problems, to balance the interests of all parties. We really have to look for new and innovative solutions. I don't think any of our colleagues from European regulators have ever had to make such decisions. Therefore, today we are primarily studying the issues and ways to solve them.

Is there an increased burden on ratepayers who remain connected to the grid?

No, tariffs remain at the value noted in existing contracts. The increase in payment is only possible by amending the contracts upon mutual agreement of the parties. It should be noted that tariffs are regulated by the government, and no increase is planned for today.

How has Ukraine's emergency synchronization with the European Network of Transmission System Operators (ENTSO-E) helped your work?

First of all, I would like to note that

the synchronization of the Ukrainian energy network with ENTSO-E is, without exaggeration, a historic moment for the Ukrainian energy sector. This was made possible in part by the unprecedented support of the international community. We are feeling this support now, and we look forward to it the future.

In response to your question, I cannot say that this was a simultaneous fulfillment of technical requirements, though work concluded a year earlier than planned. We have been preparing our power system for synchronization with ENTSO-E for a long time, making large-scale investments in the mod-

ernization of electrical networks and providing necessary reserves and regulation systems. And these efforts were not in vain.

We are currently at the stage of trial operation, which involves the establishment of sustainable technological processes and cooperation in the synchronous operation of the IPS of Ukraine in the energy system of continental Europe. We continue implementing the ENTSO-E technical requirements amidst arduous war conditions.

No commercial transactions are envisioned in the course of the trial operation. But as you might understand, the technical synchronization of the IPS of Ukraine today has

About ENTSO-E and Ukraine's Emergency Synchronization

The European Network of Transmission System Operators for Electricity, or ENTSO-E, provides for the cooperation of 39 European transmission system operators representing 35 countries. The organization is responsible for the secure and coordinated operation of Europe's electricity system, which is one of the largest interconnected electrical grids in the world.

In late February, just a few days after Russia invaded Ukraine, Continental Europe transmission system operators received a request from the Ukrainian transmission system operator and the Moldovan operator for emergency synchronization with the Continental Europe power system, known as the Continental Europe Synchronous Area. With the support of EU energy ministers, Europe's transmission system operators immediately began analyzing the technical feasibility of an emergency synchronization that would ensure the safety of the Continental Europe power system.

On 11 March, Continental Europe TSOs determined that a safe emergency synchronization was possible, and the emergency synchronization completed on March 16 with support from the European Commission, the EU member states, and national regulatory authorities.

Read more about the synchronization from ENTSO-E [here](#).

become a kind of trigger to invigorate further work towards creating legislative and market conditions for market participants in the synchronous region to carry out commercial exchanges of electricity.

Being aware of our tasks in terms of promoting the integration of energy markets and regional cooperation, the regulator today, together with key market players (including transmission system and market operators), is actively implementing a roadmap of measures to launch cross-border commercial electricity exchange operations with European countries and, eventually, ensure full integration of our markets.

I am convinced that in the future, this will allow consumers of Ukrainian and European markets to feel the positive effects of the integrated operation of energy systems, including the low-carbon capacities provided by the nuclear energy and renewable energy resources in the IPS of Ukraine.

What impacts will this war have, if any, on the market reforms Ukraine has been undergoing?

I am convinced that you are well aware of the arduous conditions to which Ukraine and our energy sector are subject today. From a technical and economic point of view, the

aggression of the Russian Federation is inflicting enormous damage on the Ukrainian energy sector by destroying technological equipment and power lines. Under other circumstances, I would be very happy to share with you our achievements in reforming our energy markets and harmonizing them as much as possible with the European ones. Not only are we continuing this course to European integration in the field of energy, we are also accelerating. Today, we understand more than ever that we are part of the European family. It is European principles and values that we profess, and this is the common thread in all the reforms we are implementing or preparing in the energy sphere.

Under martial law, the energy sector continues to operate and continues to implement and enforce the provisions of the EU regulations of the third and fourth energy packages.

Is Ukraine likely to return to a single-buyer model? Can you explain?

To be honest, we have been working and are working now on different approaches to solving the problems of the electricity market caused by military aggression in Ukraine, and

the single-buyer model was one of the options considered by the Ukrainian energy sector and, in particular, the regulator as one that could provide financial and physical balance in the electricity market.

At the same time, after a series of consultations and assurances from the international energy community, including USAID and the Energy Community, on the possibility of opening commercial electricity exports from Ukraine as soon as possible and attracting international financial support to address Ukrainian energy problems, it was deemed appropriate not to make significant changes to the existing model of the electricity market.

How do you see this war affecting Ukraine's goals for renewable energy development?

Answering this question, first of all I want to share with you a few figures. At the beginning of 2022, the actual share of renewable energy in the total energy balance of electricity production was 14.8 percent. At the same time, in accordance with the Energy Strategy of Ukraine for the period up to 2035, the goal is to achieve the share of electricity production from alternative energy sources at 7 percent in 2020, 10 percent in 2025, 13 percent in 2030, and 25 percent in 2035. These figures eloquently show that Ukraine is already exceeding its targets for the development of renewable energy.

Despite war conditions, the mechanism of stimulating electricity production in the form of a "green" tariff for electricity produced from alternative sources, as well as state guarantees, have not changed and remain valid. We are working daily on mechanisms that will enable the sustainable development of renewable energy and, as a result, promote competition in energy markets.

Among the main mechanisms, I

Ukraine's History with a Single-Buyer Model

Ukraine's wholesale electricity market was created in 1996 and operated by Energorynok, a state-owned company, as a sole wholesale trader under a single-buyer model from 2000 to mid-2019. At that time, Energorynok purchased all electricity generation and then resold it to regulated and non-regulated distributors. In 2019, to meet an agreement to implement the EU energy law, Ukraine switched from the single-buyer model to a more competitive power market structure. Read more about Ukraine's energy sector reforms [here](#).

want to highlight the following:

- granting the right to alternative energy electricity producers to leave the balancing group of the guaranteed buyer and sell electricity freely (Feed-in-Premium /Contract for difference);
- transitioning to a competitive model to determine the cost of electricity produced from alternative energy sources, through the introduction of auctions for the allocation of quotas to support electricity producers with renewable energy;
- introducing guarantees of origin and green certificates to provide support to the renewable energy;
- introducing energy storage systems and highly maneuverable generation;
- transitioning to the hydrogen economy.

Given the Russian military invasion, the global energy crisis, and the complete severance of relations with the aggressor state, I want to assure you that Ukraine will set even more ambitious goals and indicators for the development of renewable energy to achieve energy security.

Media coverage of this war has championed Ukrainian communities' efforts and ingenuity during this conflict, including civilians' use of smart phones and other connective devices to feed information to the Ukrainian government and armed forces. Have these on-the-ground efforts of Ukrainian civilians played a role in Ukraine's energy-related war response?

We can say that such approach has been tested in our country since the pandemic. Messengers, for example, allow you to transfer meter readings and pay for services. In addition, consumers have the opportunity to submit complaints or

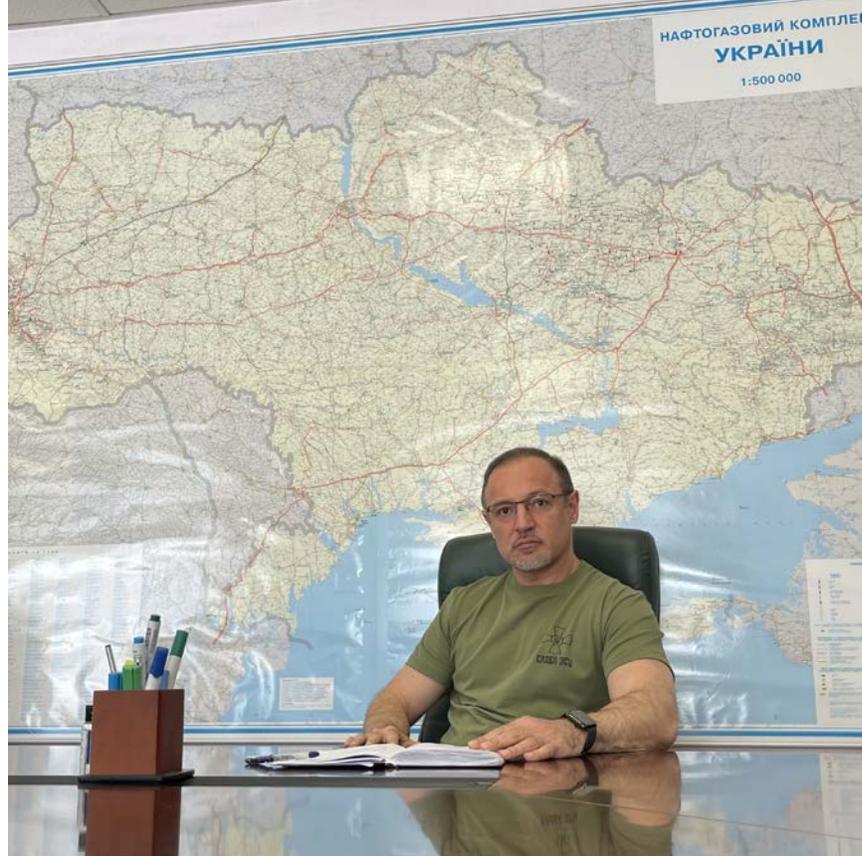


Photo courtesy of NEURC

NEURC Chair Kostiantyn Ushchapovskyi and staff of the commission look forward to returning to peacetime operations.

suggestions about the quality of services or other important aspects of the power system through electronic communication devices.

During the martial law, consumers were informed about emergency shutdowns via SMS or messengers to avoid publishing information about critical infrastructure on public resources.

And there are many similar examples. Therefore, I can confidently say that in the future the digitalization of energy, which is developing at a very rapid pace already, will be the basis of the modern economy and energy security of the state.

Is there anything else you'd like to bring to the attention of international energy regulators that we haven't already discussed?

We are grateful to the national regulators of partner countries for their clear position in support of Ukraine, and for their support to NEURC. We

have already felt the results of their coordinated work when the Ukrainian energy system was synchronized with the ENTSO-E Continental Europe Synchronous Area. President of Ukraine V. Zelenskyi referred to the event as acquisition of membership in the energy European Union.

We are also much obliged to the Energy Community for establishing the Energy Support Fund for Ukraine to counter the effects of the Russian invasion. These funds will be used to rebuild energy infrastructure, which was damaged or destroyed due to Russian military aggression in Ukraine.

We see the cruelty of the enemy. They destroy infrastructure, leaving people without light, gas, water, and heating. But with the help of our friends and partners, we will rebuild these networks, and rebuild the whole country, which will become even stronger and even more energy efficient.

REGULATORS: DISRUPTED BY CHANGE OR DISRUPTORS BRINGING CHANGE?



CullenPhotos - stock.adobe.com





Photos courtesy of CAMPUT, Public Utilities Fortnightly, and British Columbia Utilities Commission

The annual CAMPUT 2022 conference explored an essential issue facing regulators across the world—disruption.

Written by Monica Gattinger and David Morton, Chair & CEO, British Columbia Utilities Commission

When energy sector regulators, industry, and other stakeholders gather, conversations quickly turn to change. Energy sector regulation is rarely discussed without someone or several someones bringing up “massive disruption.” And as these conversations unfold, a key debate emerges: Are regulators predominantly disrupted by a rapidly changing environment? Or are regulators themselves the disruptors?

There is rarely consensus. Some encourage regulators to be change-makers, noting that the urgency of addressing issues like climate change requires proactive attention. Others push back on this idea.



The 2022 conference of Canada’s Energy and Utility Regulators (CAMPUT), titled “Deep dive into disruption,” took place May 1-4 in Vancouver, British Columbia, and featured these types of conversations. Attended in person by close to 300 regulatory and industry leaders, along with almost 200 people attending virtually, the event explored decision-making, regulation, and regulators in the context of disruption. Sessions focused on rates and utilities in a decarbonizing world, the future of gas, relationships with Indigenous peoples, energy equity and affordability, the growing role of consumers and distributed energy resources, and digitalization. The role of the regulator underpinned most conference discussions.

Here, we aim to unpack the debate and propose an answer to the question.

Regulators And Rapid Change

Start with the context. There’s no question regulators are operating within a rapidly changing environment. Much of the urgent change is driven by global efforts to reduce the effects of climate change. Meeting Canada’s climate targets of reducing emissions 40 to 45 percent from 2005 levels by 2030—and becoming net zero by 2050—requires Canada’s energy systems to change dramatically in a very short timeframe. Enormous costs lie ahead, and regulators will play an important role in climate change mitigation and adaptation. At the same time, technological change, innovation, and energy sector digitalization are occurring at a growing pace and scale, further disrupting the regulatory environment.

The emergence of new technologies and energy sources is impossible to predict. No one knows with certainty how long it will take for batteries, hydrogen, or small modular nuclear reactors to operate in the system at scale. But regulators will nonetheless be called upon to make decisions, many of which will shape the technological landscape and have significant impacts on the cost of energy. All the while, the use of distributed energy resources continues to grow, and shifting consumer expectations create the potential for “prosumers” to take on more prominence in the years ahead.

Alongside these environmental and technological disruptions, major social changes are transforming the regulatory landscape. In Canada, chief among them is reconciliation with Indigenous peoples. The need for reconciliation between Indigenous and non-Indigenous Canadians is fundamentally reshaping energy projects. Given the constitutional, legal,

and historic context in the country, Indigenous consent for projects is crucial. Without it, project approvals can face lengthy—and often successful—court challenges. Many Indigenous communities have become willing partners with other proponents on energy projects (notably partners with equity stakes). This is fast becoming the path in Canada to Indigenous consent for projects. Regulators are increasingly working alongside Indigenous advisory committees that provide ongoing advice on regulatory issues that affect their communities. Regulators are also establishing joint monitoring programs through which Indigenous communities conduct safety and environmental monitoring activities on energy infrastructure like pipelines.

Regulators are also faced with the rise of affordability and social equity imperatives, including questions of equity and affordability in rate design, tensions between price signals and affordability in emissions reductions, and how to allocate capital costs of projects when governments don’t want to defray those costs using the tax base.

All of these issues amplify uncertainty, risk, and disruption for regulators and challenge their capacity to plan, make decisions, and create appropriate regulatory frameworks. A crucial question emerges—What is the role of the regulator?—and this question begs many more.

Regulators: Disrupted Or Disruptors?

Should regulators be proactive and become disruptors? Or is their role about reacting to disruptive change? At the CAMPUT 2022 conference, some speakers advocated for regulators to “choose change” and drive it by creating regulations based on desired end states, whether those end states are emissions reductions, social equity, reconciliation, or all three. Other speakers encouraged regulators, as administrative tribunals, to “stick to their knitting” and operate within the purview of their legislative mandates. This debate has both legal and democratic dimensions. Regulatory decisions are subject to various forms of judicial review, and, at the end of the day, elected officials should be the ones deciding on broader matters of public policy.

Many of these discussions were framed, on the one hand, by the urgency of addressing climate change, and, on the other hand, by questions and concerns about how to allocate the enormous costs of decarbonization in ways that are fair and equitable. What is the precise role of regulators in this con-

text? Should regulators be the ones deciding who pays which costs for emissions reductions, when they pay them, and how they pay them? Or should regulators play a supporting role and provide evidence and data to governments to help inform policy choices on these questions?

Similarly, should regulators be making decisions about the role of gas in future energy systems? Or should regulators instead provide evidence to inform choices by governments and consumers? Speakers and attendees at the CAMPUT conference often said regulators should be proactive change-makers because of the urgency of reducing emissions: There are costs to society if regulators wait for governments to reform regulators' enabling legislation. But there may also be costs to society if regulators "lean out over their skis" and make mistakes or make decisions for which there is no democratic foundation.

At their heart, many of these discussions hinge on whether a regulator's stance on environmental, economic, or social imperatives represents a failure of legislative frameworks and mandates, or whether it's instead a failure of imagination on the part of regulators. Our view is that this bifurcated way of framing the issues misses the mark.

A More Constructive Framing

There is a more constructive approach to discussing these important topics. Instead of pointing fingers at legislation or at regulators, why not ask whether regulators can work within the broader decision systems of which they are a part to effectively navigate and respond to disruption?

Regulators are one part of a broader decision-making system for energy that includes, importantly, policymakers and legislatures. Responding effectively to climate change, technological change, social equity imperatives, and Indigenous reconciliation requires a system-level approach. First, regulators should innovate within their existing mandates. This could include working with utilities and other market participants to find innovative solutions for emissions reductions planning (or other imperatives) in an uncertain environment.

The British Columbia Utilities Commission, for example, has required regulated companies BC Hydro, the largest supplier of electricity in British Columbia, and Fortis Energy, the largest supplier of natural gas, to exchange their energy forecasts for electricity and gas. This enables each of the utilities to provide their own forecast in response to the oth-

er's and helps to foster alignment on future resource plans. Regulators could also develop scenarios for emissions reductions or electrification to inform government decision-making. There are multiple scenarios published by a variety of sources, with greater or lesser levels of rigour and credibility. With their deep expertise and access to data, regulators could play a crucial role on this front.

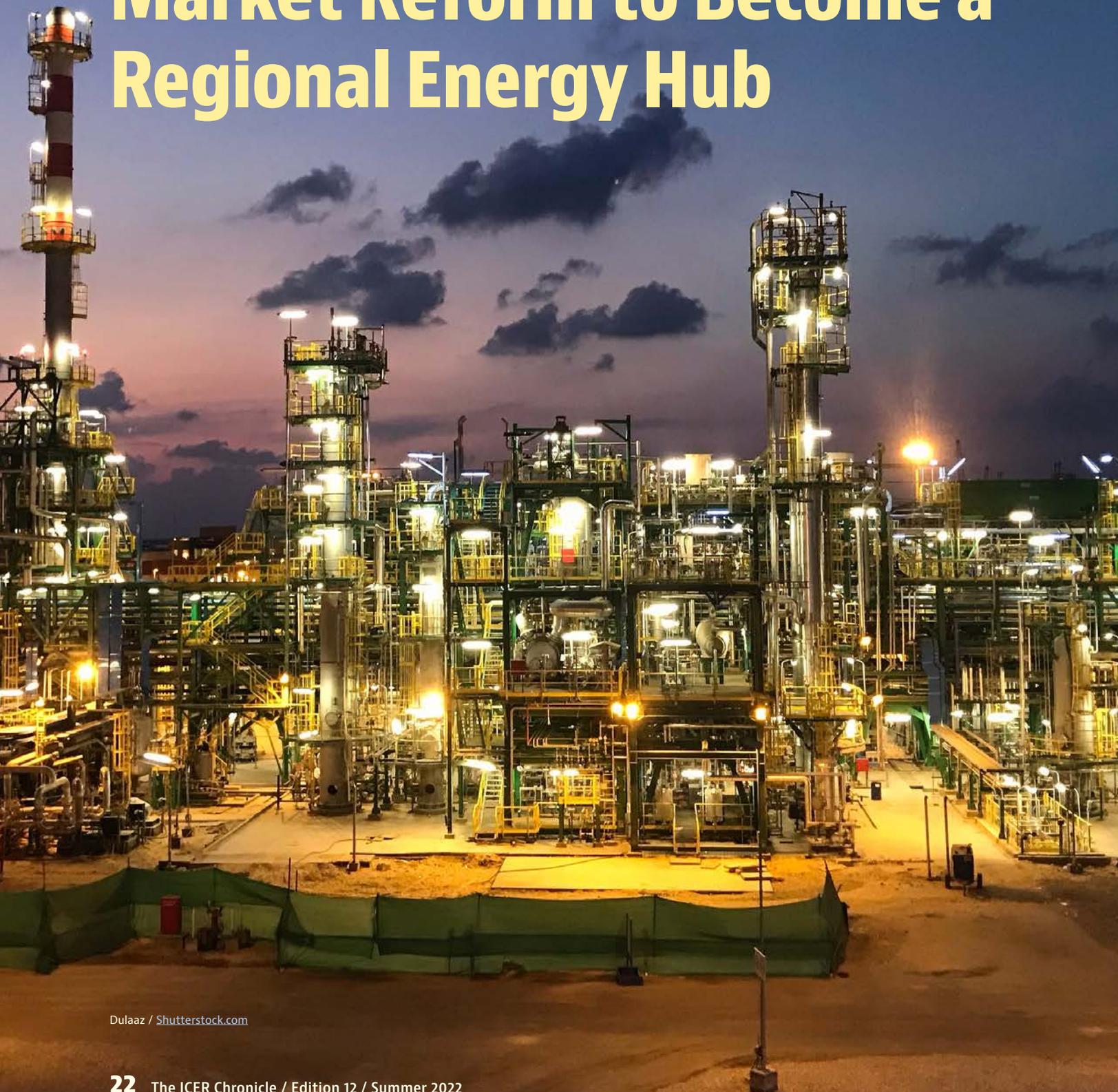
But to take this third route in the disruption discussion depends on policymakers trusting regulators to "do the right thing." Effectively navigating and responding to disruption requires a whole of system approach in which everyone is open to taking on new roles. Governments will have to decide how much authority they want to give regulators to be part of the solution for issues like decarbonization, Indigenous reconciliation, and social equity. They will then need to provide the necessary authority, resources, and personnel for them to take on new roles.

For urgent issues, such as reaching ambitious decarbonization targets, increasing the speed of change while minimizing mistakes requires improved dialogue among all actors in decision-making systems. It also requires mutual learning in meaningful and thoughtful ways in order to help foster alignment on problems and solutions, and in particular how problems can be addressed by policy, regulation, industry, and civil society. Effectively responding to climate change will also involve integrated system planning and clear communication of pathways and options. Integrated planning across sectors can help to optimize existing systems and assets for emissions reductions and, crucially, for affordability, resilience, and reliability. Regulators can play pivotal roles in all of these changes, but there needs to be shared understanding among energy sector decision-makers of their roles and responsibilities to avoid conflict, overlap, and working at cross-purposes.

Finding ways of moving faster will also require rethinking the risk tolerance of regulators and paying careful attention to the costs of failure. A culture change towards better acceptance of failure may be needed within regulatory agencies and among politicians and policymakers. Learning from mistakes—rather than punishing them—would be a good place to start.

The questions threaded through CAMPUT's 2022 conference will emerge ever more frequently in the years ahead. Regulators will need to think through their answers rapidly, thoughtfully, and proactively. So will policymakers. None of this will be easy. But it is essential for energy decision systems to navigate and respond effectively to disruption.

Egypt Embarks on Gas Market Reform to Become a Regional Energy Hub



Dulaaz / Shutterstock.com

After the discovery of significant gas fields off the Egyptian shores of the Mediterranean, Egypt is working to reform and strengthen its gas markets and regulation with the goal of becoming a regional gas hub.

Written by Karem Mahmoud, CEO, Egyptian Gas Regulatory Authority

Egypt, in recent years, has witnessed unprecedented development in natural gas discoveries, exploration, and production, becoming a net exporter of natural gas, with the potential to develop more reserves after the country achieves self-sufficiency in natural gas consumption. Thanks to a gradual increase in local production and plans to develop major gas fields in the Mediterranean region, Egypt now has the opportunity to develop a regional gas market and play a crucial role in the regional energy sector.



By NordNordWest - Own work using: World Data Base II data, CC BY-SA 3.0 de, <https://commons.wikimedia.org/w/index.php?curid=25432681>

In Egypt, natural gas remains the main source of electricity production, driven by economic growth, especially in the industrial sector. The 2015 discovery of the Zohr gas field off Egypt's coasts has had a considerable impact on Egypt's gas market. With reserves of more than 30 trillion cubic feet of natural gas, the Zohr field is considered to be among the largest gas fields discovered so far in the Mediterranean. The Zohr field's output, in addition to other gas fields, is central to the Egyptian government's plans not only to become self-sufficient but to transform Egypt into a regional energy hub. In order to realise those plans, Egypt is focusing on energy sector modernization with a key goal of developing a strong and independent gas regulator.

The Formation of GASREG

As part of Egypt's Energy Strategy 2035, Egypt's oil and gas sector has embarked on a modernisation project. The primary goal of the programme, which comprises seven sub-programmes, is to develop a modern and efficient oil and gas sector by improving governance and accountability as well as financial sustainability and fiscal balance.

This reform aims at simplifying the structure of Egypt's energy sector and improving the autonomy and independence of entities across all segments of the industry. The modernisation process also calls for adherence to international governance standards with high-performing boards and performance transparency, as well as the implementation of world-class talent management that recognises performance and encourages entrepreneurship. By setting a new gas market design, Egypt aims to become a regional gas hub, allowing external gas sources to use Egypt's gas network for trading purposes.

A new law on gas regulation was ratified by the Egyptian parliament in 2017, leading to substantial reform of the gas sector, paving the way for fair competition in the gas market, and calling for the creation of a regulator to oversee the transition while providing adequate consumer protection.

The Gas Regulatory Authority of Egypt (GASREG) is mainly responsible for developing the roadmap and action plan for the liberalisation of Egypt's gas market, in coordination with relevant stakeholders, in order to allow third-party access and, ultimately, to encourage fair and transparent competition.

In 2020, GASREG's board members approved the strategy of the new gas market design, which includes proposed stages of liberalisation, the time pe-

riod for each stage, the procedures necessary to implement them, the criteria for moving from one stage to another, and eligibility criteria.

The 2020 gas market design strategy includes the following goals:

- ◆ Transform Egypt into a regional gas hub.
- ◆ Establish a competitive market to attract new investments for the gas industry, and thereby maximise the added value for the Egyptian economy.
- ◆ Improve quality of services and increase efficiency of operating entities.
- ◆ Enhance competition and innovation to increase the quality and diversity of products and services.
- ◆ Ensure both the supply of gas and affordable, competitive pricing for local consumption by diversifying gas sources and introducing competition between different market suppliers to reduce costs.
- ◆ Optimise the utilisation of gas infrastructure, taking into consideration Egypt's extensive gas network and facilities which can be shared with neighbouring countries.

To achieve these goals, GASREG focuses on priority actions:

- 1. Diversification of gas sources and parties:** GASREG considers the available options and alternatives to provide for new eligible gas shippers and suppliers with different gas portfolios. To establish any competitive market, natural gas must be provided from various sources, whether local, regional, or global, competitively and with mechanisms to ensure the prevention of monopolistic practices.
- 2. Availability of eligible consumer base:** The presence of different types of consumers of natural gas is essential to open the Egyptian market. Currently, Egypt's biggest gas consumers are electricity power plants followed by the industrial sector.
- 3. Creation of a sustainable and economic gas market to attract investment:** One of the most vital aspects of GASREG's strategy is to ensure the existence of an effective and sustainable competitive market. Business activities across the sector must be financially balanced and incentivised to enter the market and inject additional investments required for market development.
- 4. Strengthening, supporting, and developing gas market infrastructure:** GASREG will ensure that current gas networks—both at the transmission and distribution levels—are able to deal with the expected quantities of gas and that the system operator is qualified to deal with a large number of shippers.
- 5. Set GASREG as a neutral, vital, and influential body:** Any competitive market needs a neutral,

independent, and transparent entity that ensures the market develops in accordance with the plans and strategies of the state. GASREG will regulate the relationships between market players and ensure consumer protection. It will regulate, develop, and issue rules for access to networks and facilities, monitor the market, and follow-up on implementation.

GASREG is also working on another important milestone, which is the implementation of Egypt's gas transmission network code, approved in April 2020. The approved code represents a key pillar of the mandates to liberalise the gas market by allowing regulated access to Egypt's gas transmission network. The code also manages sets of technical, contractual, and commercial rules that govern the relationship between operators and users, in addition to ensuring the smooth functioning of the gas transmission systems and facilities.

The implementation of the gas transportation network code requires extensive efforts from many mar-

ket participants and specialised resources to tackle the issues of capacity allocation and management, tariffs, and physical and commercial balancing rules.

Egypt's National Sustainable Energy Strategy

Egypt's sustainable energy strategy for 2035 is based on a least-cost approach whereby energy subsidies are eliminated by 2022 and different energy sources will compete within a free and fair market structure. The strategy, developed in 2014, envisions a total installed capacity mix comprised of 16 percent coal, 3.3 percent nuclear energy, 42 percent renewable energy by 2035. The development of the gas market should ensure supply diversification and security from a short-term perspective, while encouraging different types of gas supply, strengthening competitive markets, and improving institutional and corpo-



Sherif - stock.adobe.com

In addition to its work building a sustainable gas market, Egypt is working towards its energy strategy for 2035, which includes the goal of achieving 42 percent renewable energy by 2035. This photo shows solar cells in Cairo in 2019.

rate governance, from a long-term perspective.

Egypt highlighted its sustainable energy strategy during the 2021 COP 26 discussions in Glasgow, Scotland, and announced it had initiated important steps towards developing a sustainable energy model, at the heart of which lies the need to address and adapt to climate change. Today, sources of renewable energy represent around 20 percent of the energy mix in Egypt, which is working to increase renewables to 42 percent by 2035, coinciding with the rationalisation of energy subsidies. Egypt is also working to increase clean mobility by expanding metro, rail, and electric vehicle networks, preparing the necessary infrastructure for a clean mobility transition, and establishing smart and sustainable cities.

To place these efforts within their institutional framework, Egypt has completed the preparation of a 2050 national strategy for climate change, which will open the way for Egypt to update its Paris Agreement Nationally Determined Contributions so that policies, objectives, and measures encompassed in Egypt's NDC become integral to the state's developmental efforts.

Towards Hydrogen and the Future of Sustainable Energy

Since Egypt's overall strategy focuses on creating a diversified and sustainable energy mix and boosting its use of natural gas as a greener fuel, GASREG is taking part in collaboration with MEDREG and peer energy regulators—in different studies, workshops, and cooperation initiatives—to assess adequate methodologies and regulatory frameworks for the uses of hydrogen as an efficient energy resource.

Hydrogen has witnessed great momentum over the last few years, having been identified as a critical success factor for the global transition to a decarbonised society. But so far, cost and scale challenges remain, even if hydrogen is becoming competitive in some geographies and applications.

At GASREG, we believe that cooperation and en-

agement at regional and international levels is required to continue developing strategies to incorporate hydrogen in the energy mix. We continue to debate with our Mediterranean peers about the opportunities, challenges, and possible ways forward to further develop a hydrogen economy, either on a national scale by regulatory authorities or re-



Baloncini / Shutterstock.com

Egypt is working to increase clean mobility by expanding metro, rail, and electric vehicle networks.

gionally among MEDREG's different activities and plans.

The global challenges facing humankind, such as climate change, can only be resolved at a global level and by promoting sustainable development.

Considering its important gas resources and its recent energy policy reforms, Egypt is emerging as a regional energy hub. The modernisation process of the gas market led by GASREG aims to improve and reinforce the development of gas transmission and distribution infrastructure to enable competitors to access the Egyptian gas network and to allow larger quantities of gas to be traded. Optimisation of Egypt's energy infrastructure will also allow Egypt's transition to a sustainable energy sector, integrating an increasing share of renewables and smart technologies to deliver on the climate change objectives while providing high quality services to consumers.

Energy Regulators Promote Dynamic Regulation to Boost Innovation

Responding to changes in energy law and markets requires energy regulators to evolve with the times.

*Written by Slobodan Vidović,
Bundesnetzagentur, Germany*



nito - stock.adobe.com

European energy regulators have been working on the topic of dynamic regulation since 2018, when they saw the need to address the new regulatory challenges that were emerging in the context of the energy transition.

Energy regulation must be stable, but not static, and coherent with changing environment and market evolutions. The way regulatory authorities regulate the energy market needs to evolve to facilitate the changes proposed by the EU legislation. In most EU member states, the existing national legal and regulatory frameworks provide latitude for innovation, incentive regulation, or a combination of both.

The main areas where dynamic regulation tools have been used so far are tariff structures, price and revenue controls, and smart metering. Commonly used dynamic regulation tools include pilot projects, pilot regulations, and regulatory experiments.

Dynamic regulation was one of the core themes of the Council of European Energy Regulators' (CEER) 2019-2021 "3D" strategy, alongside digitalisation and decarbonisation. It continues to be a key strategic feature of CEER's current strategy, with a focus on consumer-centric dynamic regulation.

Through a dynamic approach, energy regulators want to ensure a regulatory framework that enables markets and competition to work properly, ensuring efficient price signals and robust consumer protection.

The concept of dynamic regulation can be defined, according to CEER report "Dynamic NRAs to Boost Innovation," as follows:

"[Dynamic regulation is] a regulatory approach that is limited in time, focused on the energy sector activities it covers and/or the energy sector actors who can participate, and which aims to cope with some kind of novelty in the energy system with the ultimate goal of informing future regulatory decision-making through experimentation."

Economic regulation of energy services is characterised by a tension between the need for stability and predictability and the need to evolve over time. The transition towards a decarbonised economy is changing the fundamentals of the energy systems. Energy regulators must be responsive to these changes while keeping the energy sector's regulatory framework stable.

Two recent papers published by CEER demonstrate how dynamic regulation has the capacity to drive growth and innovation within the energy system.

Best Practices and Key Considerations of Dynamic Regulation Models

In its newly published report titled "Dynamic NRAs to Boost Innovation," CEER highlights experiences and recommendations by energy national regulatory authorities (NRAs) on dynamic regulation. The report compares and evaluates dynamic regulation projects in EU member states, including France, Ireland, Italy, Lithuania, Portugal, and the Netherlands, and in countries outside the EU, such as Australia and Great Britain. It assesses the approaches taken by these different states in order to propose good practices and recommendations regarding the role of NRAs.

The report presents two sets of recommendations to better implement dynamic regulation tools. The first set relates to the common features that all dynamic regulation initiatives must have in order to be successful:

- ◆ An enabling legal framework,
- ◆ Clarity on the objectives of the dynamic regulation initiative,
- ◆ Well-defined processes and approval criteria,
- ◆ Appropriate consumer protections,
- ◆ Clear and extensive communication and support,
- ◆ Clear, early plans for reporting, monitoring, and evaluation, and
- ◆ Sufficient resourcing of the implementing regulatory agency and of participating stakeholders.

The second set of recommendations relates to the fact that there are many different options for implementing dynamic regulation. No one option is clearly superior to all others—the decision on which option to use depends on local circumstances, such as market structure, and on the objectives of the initiative. The report highlights the options available across five elements of dynamic regulation:

1. The degree of regulatory authority involvement. In some cases, regulatory authorities are the driving force behind initiatives, such as in the case of Italy and Ireland. In other cases, regulatory authorities act as facilitators, and projects are led by innovators, sometimes referred to as being demand-led, as in the case of France and Lithuania. And sometimes, regulatory authorities have a limited role or are primarily observers of dynamic regulation led by another entity. This was the case in the Netherlands, where the regulator's involvement was restricted to approving the tariff methodology proposed by the project developers once the project had received an

exemption to operate within the sandbox.

2. The scope of activities. Dynamic regulation approaches range from covering a very specific energy-related activity—such as identifying a solution to a particular problem—to covering a potentially very broad range of activities in the energy sector. For example, a pilot project in Lithuania was open to activities in electricity, gas, and district heating, whereas a regulatory sandbox in Great Britain covered all energy activities under Ofgem’s jurisdiction.

3. The provision of funding to support the innovation, or the access to performance-related incentive payments, is a feature of some dynamic regulation initiatives.

4. The type of participants involved. Dynamic regulation approaches differ depending on whether the primary participants are regulated network operators, incumbent market participants, or new entrants

5. The primary aim. All dynamic regulation approaches seek to promote innovation, whether technical or procedural and to inform future regulatory reforms. However, the balance of emphasis between the two may be different in different circumstances.

Innovative Toolkits for Implementing Dynamic Regulation

In another of its recently published papers, CEER expands on its discussion of dynamic regulation by exploring regulatory sandboxes as well as other tools that regulators use to foster and support innovation without compromising efficiency and neutrality.

This second paper, titled “Regulatory Sandboxes in Incentive Regulation,” provides a framework for the different tools that regulatory authorities can use to facilitate innovation in the context of incentive regulation for grid operators. It also examines the use of “derogations” provided by NRAs as these are a closely related concept to regulatory sandboxes, with similar purposes.

What else can be found in the regulatory sandboxes report?

- ◆ The reasons why NRAs should facilitate innovation, including the digitalisation of energy services, which provides significant opportunities for innovative business models;
- ◆ The characteristics that can differentiate regulatory sandboxes or experiments, as well as the common pillars of all the regulatory tools to support innovation;
- ◆ The relationship between regulatory sandboxes

and other similar tools with incentive regulation of grid operators: regulators can move towards a more proactive stance to facilitate innovation, and, in turn, the results of projects that benefit from a regulatory sandbox can inform regulatory authorities in their design of incentive regulation; and

- ◆ The institutional issues of regulatory sandboxes, among which coordination and cooperation with other public institutions, research bodies, and research, development, and demonstration funding agencies are of paramount importance.

The conclusions section of the sandboxes report provides a toolkit with four complementary tools for implementing dynamic regulation, including regulatory sandboxes, pilot projects, regulatory experiments, and pilot regulations. Finally, a few recommendations are provided to NRAs:

- ◆ Regulatory authorities should engage in removing barriers to innovation, as a first preliminary step;
- ◆ Regulatory authorities could use the toolkit, selecting the best-suited tool, or combination of tools, according to specific cases;
- ◆ When approaching the toolkit, regulatory authorities should take into account the differences between regulated grid activities and competitive market activities, including funding;
- ◆ When supporting innovation, regulatory authorities must avoid the barring of competition in wholesale, retail, and adjacent markets; and
- ◆ Improving the learning process among all involved parties, regulators included, and dissemination of knowledge are ultimately the goals of each regulatory tool for supporting innovation.

Learn more

To collect and centralise knowledge on this topic, CEER built a dedicated section on its website called the “[Dynamic Regulation Platform](#),” which includes a repository of all of CEER’s work on dynamic regulation.



Restructuring a Restructured Market

One U.S. state takes a new approach to customer billing and how energy providers can best serve consumers under deregulation.

Written by Molly G. Knoll, Senior Commission Advisor, Maryland Public Service Commission

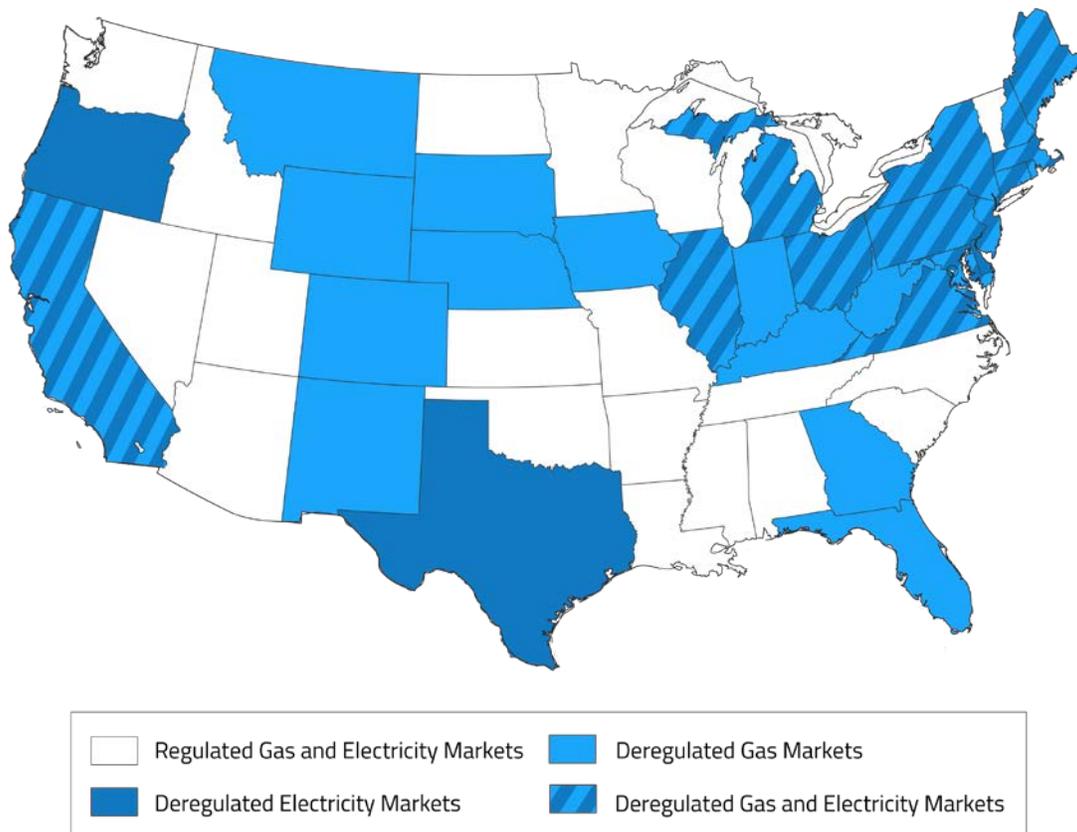
Over the last four years, the Maryland Public Service Commission convened a diverse group of stakeholders, including utilities, consumer advocates, and retail suppliers, to develop and approve a regulatory structure to authorize retail suppliers to provide direct billing services inclusive of utility charges to customers. Supplier consolidated billing, or SCB, will allow retail suppliers to compete based on the billing services they provide to customers. Over the next two, or more, years, Maryland will become the only U.S. state to provide this option to all residential electric and gas customers.

More than 20 years ago, Maryland rode the wave of restructuring in the hopes of increasing benefits for utility ratepayers. Restructuring separated the distribution (poles and wires) and supply (electricity or generation) functions of monopoly utilities. The core of restructuring, or deregulation, is that while some aspects of utility service have monopolistic features, others do not.

Restructuring sought to separate the non-monopoly aspects of utility service from regulatory oversight and allow competitive markets to replace traditional economic regulation. Restructuring created a new actor in the utility industry—a retail supplier—who buys and sells power in the wholesale regional markets and sells it directly to ratepayers. Retail suppliers can own generation or simply purchase electricity for resale. While distribution utilities are rate regulated, because they provide an essential service to a captive audience, retail suppliers are licensed and can structure their products without oversight. Over the years, this new player has begun providing other utility services that are not natural geographic monopolies and where retail suppliers can provide value to customers.

As the Maryland restructuring law recently recognized, billing and associated customer service functions are not necessarily a monopoly service. There is no essential reason why utilities must translate

Regulated and Deregulated States



Source: Electric Choice.com

metering data into a customer bill.

“Allowing suppliers to have a billing relationship with their customers supports retail energy markets in many positive ways,” notes Maryland Public Service Commission Chair Jason Stanek, “fostering innovation, giving customers more options, and promoting competition across the marketplace.”

In short, markets may provide better outcomes than regulation. Unlike with poles and wires, there is no physical clutter associated with multiple entities providing utility bills. For monopoly services, implementing changes to utility billing systems has become complicated and expensive. In 2015, updating utility systems to comply with new retail supplier regulations took 18 months and more than \$3.5 million across Maryland utilities.

Customer Benefits

Utility consolidated billing (UCB)—where the former-monopoly utility provides billing services for both distribution and, under deregulation, competitive suppliers—lacks flexibility. With UCB, each residential customer has the same access to the same billing and customer service offerings from their utility—nothing more and nothing less. Billing system costs are spread across all accounts. Therefore, larger utilities may offer better systems, more frequent upgrades, or superior bill designs while placing a smaller burden on each individual customer. Utilities are also required to serve all customers equally: A customer who has been in the same home

for 20 years, automatically pays their e-bill every month, and never calls customer service pays the same for their billing services as a customer who moves yearly, pays cash in-person, and calls customer service monthly.

Providing competitive billing services under SCB, allows a competitive entity to bill for both their charges and the utilities’ charges, offering the potential to address each of these need cases. For suppliers with large, multi-state customer bases, billing system costs can be spread over more accounts. Where a retail supplier serves customers in multiple states or utility service territories, their systems may be nimbler and more adaptable, to respond to different regulatory requirements or changing needs.

Suppliers, who are competing for customers, can offer billing services as a benefit to customers—shorter wait times to call centers, better bill designs, customized levels of customer outreach—and offer additional products to customers in conjunction with the commodity. Customers can decide what has value for them and perhaps pay more or less, depending on how—and how frequently—they access these services. SCB can also help in cases of “slamming,” an illegal practice of switching a customer’s supply service without consent.

“In my practice, I see too many consumer complaints where customers contend they didn’t know they were taking service from a supplier,” said Brian Greene, a lawyer who represents retail suppliers, including the suppliers that filed the SCB Petition in Maryland. “With SCB, customers will get a bill from

Traditional vs Deregulated Energy Market

Traditional

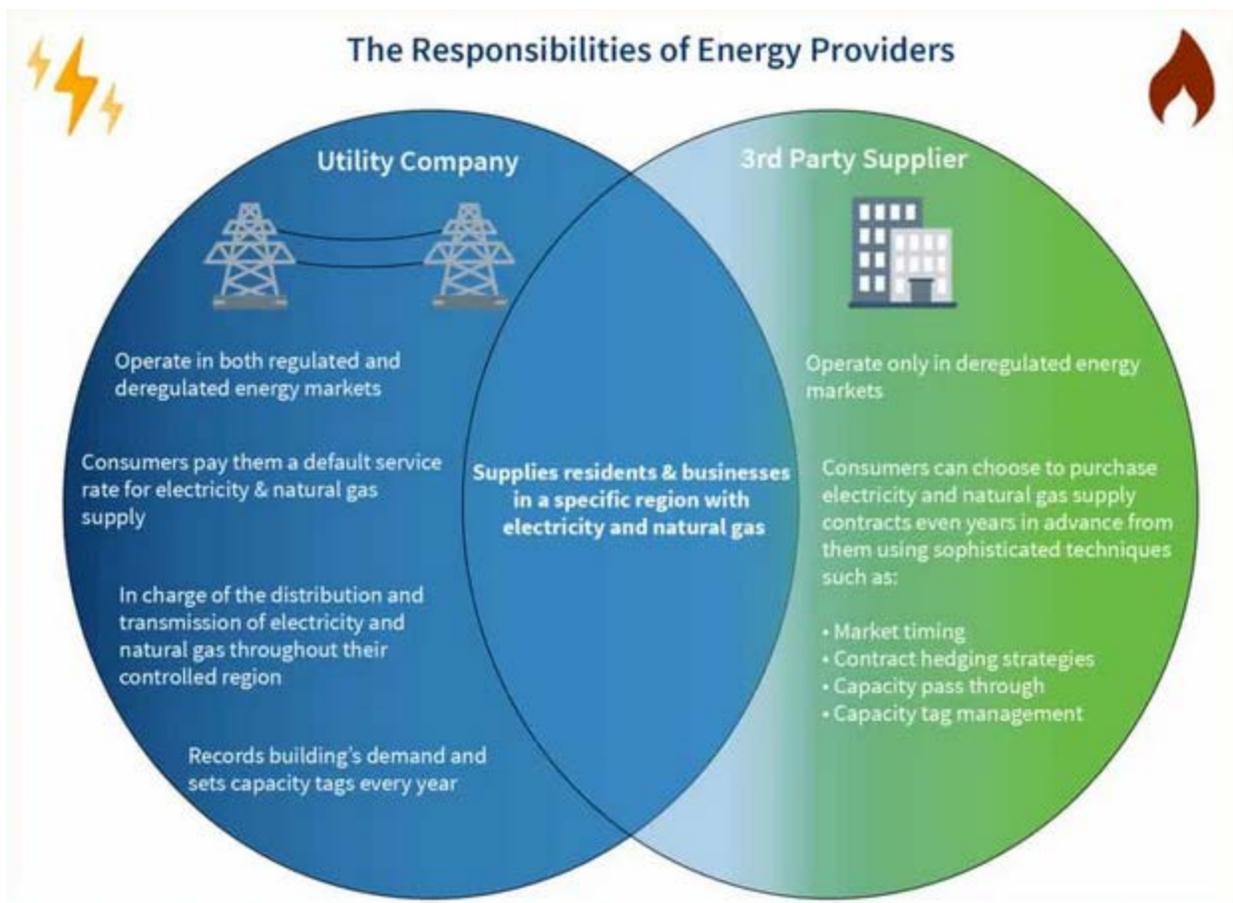
- Utility provider functions as monopoly
- Utility provider is also energy supplier
- Rates are set by the state's public utilities commission

Deregulated

- Utility provider still delivers electricity to homes/businesses
- **Customer can choose a different energy supplier than their local utility provider**
- The state's public utilities commission still regulates when needed to protect consumer

ElectricityRates.com

Source: Utility vs. Retail Energy Supplier, ElectricityRates.com



Source: Energy 101: Utilities and Suppliers, Best Practice Energy

their supplier. The supplier's charges will no longer be buried within the utility bill. SCB ensures customers know exactly who is supplying their electricity or natural gas and who to hold accountable when things go wrong," he added.

The Path Toward a New Framework

Recognizing these potential benefits and the existing authorization from the legislature, the Maryland commission ordered utilities, advocates, technical staff, and retail suppliers to develop a regulatory scheme that would allow for SCB while maintaining existing customer protections. Over the course of two years of weekly meetings and many hours of public hearings, the commission's technical staff and industry representatives worked to unravel policy issues, craft consensus, and ultimately provide the

commission with a cohesive set of regulations to advance this state policy.

"A number of the parties involved have competing interests, but they have come and continue to be willing to work, negotiate, and listen to each other," recalls Benjamin Baker, the director of the Telecommunications, Gas, and Water Division at the Maryland commission, who served as the workgroup leader.

Crafting the regulatory rules for the SCB offering ultimately became an exercise in risk management, balancing the business risk to the suppliers of customer non-payment, business risk to the utilities of supplier non-payment, and risks to the customers of losing some consumer protections that come from participating in SCB and of paying for utility system upgrades to facilitate this capability without being sure of its benefits.

The tradeoffs in risk were intertwined and required careful compromises that looked at each

element, as well as the holistic picture. Too many regulatory requirements would mean that suppliers may not seize the opportunity to provide these services. This would leave utilities and ratepayers footing the bill for an expensive endeavor that provided no benefits.

“I have significant concerns about how much the utilities are saying it will cost to implement supplier consolidated billing,” says David Lapp, Maryland’s ratepayer advocate. “Regulators need to take a hard look at those costs.”

Considerations for Optimal Outcomes

Meanwhile, too little oversight would create the potential for poor customer experiences and outcomes. Improperly sharing the risk of any non-payment would financially harm the retail supplier, the utility, and by extension ratepayers, or both. Ultimately, the commission crafted a delicate balance that satisfies the statutory direction and will hopefully provide customer benefits in the future. Key considerations include disconnection authority, customer eligibility, payment posting, and bundled products.

Disconnection Authority

Initially, the proponents of SCB were adamant that to succeed, the retail suppliers that offer billing services must have the ability to direct utility disconnections. Disconnection authority is arguably one of a utility’s most powerful collection tools. Suppliers argued they needed this tool to collect charges and manage bad debt. The commission found that disconnection authority should remain solely with the utility while SCB is initially implemented. However, SCB would put a supplier in the position of collecting both their charges and those of the distribution utility. The commission directed Maryland distribution utilities to re-purchase their unpaid distribution debt when a supplier ceases service to a given customer.

“The commission’s guidance to permit suppliers to return utility arrears highlights the most complicated issue to solve, which was the treatment of payment

“Allowing suppliers to have a billing relationship with their customers supports retail energy markets in many positive ways, fostering innovation, giving customers more options, and promoting competition across the marketplace.”



*Maryland PSC Chairman
Jason Stanek*

challenged customers and their unpaid balances,” says Baker.

Prohibiting supplier-directed disconnections increases the supplier’s risk in offering SCB; requiring utilities to re-purchase distribution debt limits that risk to only the costs of the supplier’s own offering. Meanwhile, a customer’s risk of disconnection decreases because supplier charges no longer contribute to balances that would be considered by the utility when determining whether to disconnect the utilities for failure to pay.

Customer Eligibility

Utilities cannot discriminate against customers; a utility must serve all customers within their franchise. However, a retail supplier has no such obligation; suppliers can manage their non-payment risk through customer selection. Customers with poor payment history, financial hardship, or those who switch suppliers to avoid paying arrearages are customers a supplier may not want to enroll. In addition, developing regulatory guidelines and eventual programming costs for handling existing arrearages and bill assistance grants would have required significant resources.

Recognizing these realities, the commission authorized three eligibility requirements for the SCB program. These limitations are that: a customer cannot

have arrearages greater than 30 days, cannot be on a payment arrangement, and cannot receive energy assistance while on SCB. Energy assistance customers represent perhaps the highest risk of non-payment of any group and have incomes 150 percent or less than the federal poverty guidelines and are already receiving bill, and likely arrearage, assistance.

Removing these high-risk customers from the SCB pool provides two benefits: reduces customer non-payment risk for SCB providers and lowers implementation costs for the utility.

Payment Posting

When a customer makes a partial payment on their utility bill, it becomes vitally important to determine which charges are paid and in which order (arrearages, supply, distribution, other services). Under Maryland's UCB paradigm, payments from customers to the utility are applied in the following order: oldest arrears, distribution service charges, and finally, retail supply charges. Additionally, suppliers cannot place any non-commodity charges on a utility bill. In the UCB program, Maryland bills have a "purchase of receivables" for retail suppliers line-item indicating that the utility pays the supplier the full amount the supplier identifies on the customer bill each month, regardless of whether the customer pays that amount. Once the supplier is paid, any amounts the customer does not pay become utility debt, and subject to disconnection. This is specifically designed to reduce disconnections and minimize the uncollectible debt that is socialized to all customers.

For suppliers offering SCB, purchase of receivables is more complex because suppliers often offer and bill for non-utility and "bundled" services. However, unlike utilities, suppliers are not guaranteed any cost recovery for uncollectible bad debt. Another complication is that a supplier could serve customers of multiple distribution (gas or electric) utilities. Suppliers providing billing services want to be paid first in order to compensate for the costs of providing the billing service. This is balanced with the fact that utilities are ultimately responsible for distribution charges, which, if unpaid, will eventually lead to disconnection and loss of utility service.

In response, the commission crafted a compromise that would allow pro rata application of payments. When a customer makes a partial payment, the supplier will pay the oldest charges before the current charges. In each age category, the payment

will be split in proportion to the amount of the distribution v. supply charges. Finally, bundled and non-commodity charges are paid last.

This is the clearest—and perhaps most complex risk-sharing compromise in the regulatory paradigm: supply and distribution charges are prioritized equally; meanwhile, satisfying the oldest charges first and removing supply charges from balances leading to disconnection reduces a customer's disconnection risk.

Bundled Products: Non-Distribution, Non-Supply Charges

The final element of risk management under supplier consolidated billing is how to treat supplier charges for "bundled charges." These are charges that include both a commodity and a non-commodity product. For example, a supplier offering a fixed-rate commodity charge that includes HVAC maintenance, home energy monitoring, or even a Netflix subscription. In many cases, suppliers can separately charge these types of products; in some cases, the non-commodity offering is embedded in a fixed or bundled price.

Embedded products combined with payment posting that prioritizes payment of non-commodity charges above distribution charges could increase a customer's disconnection risk and include a new risk of disconnection for products unrelated to supply and delivery of gas.

Allowing suppliers to design their own products—bundled or separate—in light of the payment posting order will allow them to control their own payment risk. This is balanced with both non-commodity and bundled charges being paid last in the payment order, which minimizes the potential for these charges to result in a customer utility disconnection.

Maryland's supplier consolidated billing regulations were the result of broad stakeholder input, numerous resources, and a set of compromises over the course of many years.

"Supplier consolidated billing will enable Maryland consumers to get a bill from the company that actually supplies their energy," said Mike Starck, vice president and general manager for NRG Energy, Inc.

Ultimately, time will tell if the commission struck the appropriate balance to allow the market to bring the promised customer benefits of restructuring to Maryland.



**Meet Eng. Ziria
Tibalwa Waako,
CEO of Uganda's
Electricity
Regulatory
Authority**

Photo courtesy of ERA

In this interview, the CEO of Africa's top performing regulator discusses regulatory excellence and insights on overcoming gender imbalance in the energy sector.

Interview compiled and edited by Kate Griffith

Under Eng. Ziria Tibalwa Waako's leadership, Uganda's Electricity Regulatory Authority (ERA) has earned top recognition by the African Development Bank's Electricity Regulatory Index for four years straight. Ziria has served as CEO of ERA since 2017, but her rise to leadership was a challenging journey.

Ziria is an electrical engineer with more than 30 years of work experience across Uganda's entire electricity supply industry, from generation to distribution and now regulation. Here, the engineer, wife, mother, and social advocate discusses the successes of ERA as well as the gender-based challenges she faced through her education, her determination to succeed in a male-dominated field, and how she encourages women to reach for leadership positions in the energy sector.

The African Development Bank's Electricity Regulatory Index for Africa recently named ERA the top-performing regulator in Africa. What qualities set Uganda apart from peer regulators in Africa?

For the fourth consecutive year, Uganda's electricity regulatory framework topped the Electricity Regulatory Index released by the African Development Bank. This

composite index measures electricity sector regulatory frameworks in African countries against international standards and best practices.

The primary reason why Uganda has emerged number one in 2018, 2019, 2020, and now for 2021 is that its electricity regulatory framework is well developed compared to its peer regulators.

In addition, Uganda's regulatory framework is transparent, with clear processes, laws, regulations, and guidelines both on paper and in practice. ERA has the capacity to exercise the necessary regulatory oversight and authority throughout Uganda's entire electricity sector as well as having an excellent board, management, and staff, all of whom contribute to the success and stability of Uganda's electricity supply industry.

How have you worked to support those qualities in your role as CEO of ERA?

As the chief executive officer, my role is to ensure ERA achieves the objectives enshrined in its business and strategic plans. In particular, I focus on ensuring adequate power supply, improving investments in the sector, and ensuring the regulatory climate is transparent and predictable to our stakeholders. I do all this to improve power supply quality and reliability for a better customer experience.

In 2020, ERA developed investment and verification regulations as well as electricity supply quality regulations, in addition to establishing a uniform system of accounts in 2018. ERA also promotes transparency by ensuring continued stakeholder participation, for example, in the setting of fair and reasonable tariffs.



ERA continues to monitor the performance of the ERA-licensed companies relative to the terms and conditions of their licenses, established regulations, and standards of service. As a result, Uganda's electricity regulatory framework continues to rank number one in the African Development Bank Electricity Regulatory Index, and we strive to always be at the top.

What is next for ERA?

At ERA our vision is to be a recognized regulator in promoting sustainable electricity supply for socio-economic transformation, which implies having sufficient, affordable, quality, and reliable generation, transmission, and distribution of electricity to Ugandans, wherever they are at an affordable price.

Our focus is now on ensuring a reliable and quality electricity supply, affordable tariffs, and accelerated access to electricity supply.

We are fast-tracking the establishment of infrastructure projects, with consistent supervision of project works. We are providing a tariff regime that is self-reliant and predictable. We are also advising the Minister of Energy and Mineral Development regarding the investments required in the electricity sector, such as the privatization of transmission to fast track the construction of the grid. Last but not least, we are supervising the implementation of government policies to quickly achieve an 80 percent customer access rate by 2040.

Learn more about Uganda's work with off-grid power, renewables, and universal access to electricity in this [recent interview](#) with Ziria Waako in *African Business*.

What are your goals for your future leadership of ERA?

I share in ERA's vision of being a recognized regulator in promoting sustainable electricity supply for socio-economic transformation. With the ERA Board's support, I have a goal of recruiting and continuously training ERA staff to be ready to tackle the pressing issues in the electricity sector.

At ERA, we are introducing an information management system to address the issue of future digital markets. When completed, all licensees' reporting, regulations, and management will be automated. I am also focusing on re-training and re-skilling ERA staff and board members to enable ERA to cope with the digital transition and technological advancement.

My goal is to have a dynamic workforce and environment that embrace the present and the future of electricity regulation.

What challenges do you see women facing in this industry in the future? What are the opportunities?

The challenge women face in attaining positions in the energy sector is a historical one. There is a bias that needs to break.

Historically, not as many women pursue science, technology, engineering, and mathematics, or STEM-related courses, implying that women will face a challenge finding positions in the sector. However, we see the number of women studying STEM subjects increasing, which is a good sign. For already qualified



Photo Courtesy of Uganda ERA

women, many opportunities are already available, including increasingly free and fair recruitment processes.

At ERA, we provide a work environment where women thrive and positively contribute to the development of the electricity supply industry.

We ensure female staff have access to equal and fair employment opportunities, a transparent succession planning system that allows staff to competitively assume positions of responsibility within the organization, and capacity-building to boost the knowledge and skills of staff so they can effectively deliver on their mandates. ERA also caters to the wellness of staff to ensure total productivity.

ERA's human resource policies have specific provisions in place for maternity leave, sexual harassment, and performance management. Women need to position themselves to take up positions and enjoy the opportunities.



Uganda prides itself on producing 60.8 MW from four grid-connected solar power plants. This plant is part of Access Solar Uganda.

When you were growing up, did you expect to work in the energy sector? What challenges did you have in your career?

Growing up, I didn't focus on becoming an engineer until my secondary education. Becoming an engineer and working in the energy sector was influenced by the selection process at my school—the best performers would study science subjects. Because science subjects were seen as a boys' area and for bright students, I worked hard and succeeded in joining the best performers' cohort studying science subjects. That's how my future got shaped.

While pursuing my dream, I encountered family gender biases. My family wanted me to become a banker, which was thought to be a better profession for women. I wanted to become an engineer.

During my education, I insisted on studying physics, chemistry, and

mathematics with the goal of becoming an engineer. However, I was not admitted to university to study engineering. I was admitted for another course that I refused to pursue.

Since I wanted to be an engineer, I pursued a technical diploma in electrical and electronics engineering at Uganda Polytechnic Kyambogo, now Kyambogo University. On completing that diploma, I then pursued a higher technical diploma in electrical and electronics engineering. I performed exceptionally well.

With my two technical diplomas, I was admitted to Makerere University in Uganda to pursue a bachelor of science degree in electrical engineering. This is when I started to disprove others' ideas that I would not "make it" in life after failing to become a banker. I continued with my studies, attaining a master of science degree in electrical engineering, a master of business administration degree, and a

post-graduate diploma in advanced management leadership, among other studies.

I am now a registered engineer with the Uganda Institute of Professional Engineers and the National Engineers Registration Board, and I am a member of the Institute of Electrical and Electronics Engineers of New York.

What achievements are you most proud of?

Concerning my achievements, I am most proud of those I have realized while serving as CEO of ERA.

One of the significant achievements I am very proud of is that, in 2016, Uganda commissioned its first grid-connected solar photovoltaic plant of 10 MW. Today, Uganda prides itself in producing 60.8 MW from four grid-connected solar power plants.

As an individual, I am proud of having been awarded the Excellent

Performance Engineers Award by the Uganda National Engineers Registration Board in 2019.

How do you work to support women seeking leadership roles in the energy sector?

As ERA's CEO and as a woman, I encourage women to study science, complete with studies high-quality qualifications, and vie for leadership positions in the energy sector. I am always available to support and mentor women who need support. However, women and the entire public need to appreciate that in the recruitment process at ERA, women and men are hired based on merit. There are no special considerations for women. Vacancies are advertised, and whomever emerges as the best candidate gets hired.

To support women and see them

get positions in the energy sector and in other science-related sectors, ERA participates in "Women in Energy" programming. Each year in March, women serving in the energy sector participate in mentoring young women and encouraging them to take up math and science-related courses so that they may become the next generation of energy professionals.

Currently, Uganda's energy sector leadership is female, including the minister of the Ministry of Energy and Mineral Development, the chief executive officer of the Uganda National Oil Company, the acting executive director of the Rural Electrification Agency, and myself as CEO of the electricity regulator. Women are also in high-level positions in the private sector, including the managing director of Eskom

Uganda Limited, the chief operations officer of Umeme Limited, and the director of finance of Bujagali Energy Limited.

We also have a capacity building program within the electricity supply industry, where we provide some limited resources to licensees, to recruit and train fresh graduates. To benefit from this program, licensees must ensure that at least 40 percent of their graduate recruits are women.

These are just some of the initiatives we are taking to bridge the gender divide and see women take up positions in the energy sector, and we are slowly overcoming the gender imbalance. I believe that the energy sector in Uganda has become a model sector for gender mainstreaming.

Kampala, Uganda, by night.

Arnold Mugasha / Shutterstock.com



ICER's World Forum on Energy Regulation Returns in 2023

The 8th World Forum on Energy Regulation will convene March 21–24, 2023, in Lima, Peru.

Join us in Peru for the leading international conference on energy regulation—along with energy industry players, policymakers and regulators, and academics and thinkers from all over the world—to engage in strategic and meaningful conversations about the future of energy.

Hosted by OSINERGMIN, the Peruvian Supervisory Agency for Investment in Energy and Mining, and developed in coordination with ICER. Bookmark this [website](#) for future updates.

Photo: Christian Vincés - stock.adobe.com

Join WFER in Peru

Peru is a multicultural nation, filled with traditions, a unique gastronomy, and vast natural reserves as a result of its geography: coast, highlands, and jungle. Peru is a fascinating country that is now reaching 200 years of independent life and has contributed in a significant way to build the world as we know it today. For example, one of its major food contributions is the potato; and for engineering contributions, we can find the complex road network system built by the Incas. [For more information,](#) please visit Peru's office of tourism.