

ICERChronicle

Edition 10 Summer 2021

An aerial night photograph of Europe, showing the continent illuminated by city lights. The lights are concentrated in major urban centers and along coastlines, creating a glowing pattern against the dark landmass. The surrounding oceans are dark, and the sky is a deep blue. The overall scene is a high-angle, wide shot of the continent.

ICER
Begins Its
Second
Decade

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Communications manager, MEDREG Secretariat



Daphné Lacroix is the communications manager within the MEDREG Secretariat, based in Milan, Italy. She joined the organization in 2016 and is in charge of promoting the institution's activities.

She also manages the Communication Officer Network which ensures the efficient flow of information between the Secretariat and the members. Prior to joining MEDREG, Ms. Lacroix campaigned for sustainable energies and forests within environmental organizations in London and advised private firms on public affairs related to energy policies in Brussels.

Carl Pechman, NARUC

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Dr. Carl Pechman, Director of the National Regulatory Research Institute, is an electricity economist and expert in the theory and practice of regulation. His experience includes work as a

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Chief Executive Officer, RAERESA



Dr. Mohamedain E. Seif Elnasr is an energy policy and regulation expert with more than 25 years of experience in managing the promotion of the development of energy in Eastern and

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Ravindra Kadam

Renewable Energy Advisor, Central Electricity Regulatory Commission



Ravindra Kadam is currently working as a renewable energy advisor with Central Electricity Regulatory Commission in New Delhi, India. He looks at the regulatory and policy issues in

renewable energy and other innovative technologies. He also deals with issues of market development

for renewable energy and conventional sources. He has more than 15 years of experience in the power sector, covering a range of key issues such as renewable energy, regulatory development, renewable energy certificate mechanisms, tariff setting, financial and economic analysis of power projects, and more.

Rashmi Saurav

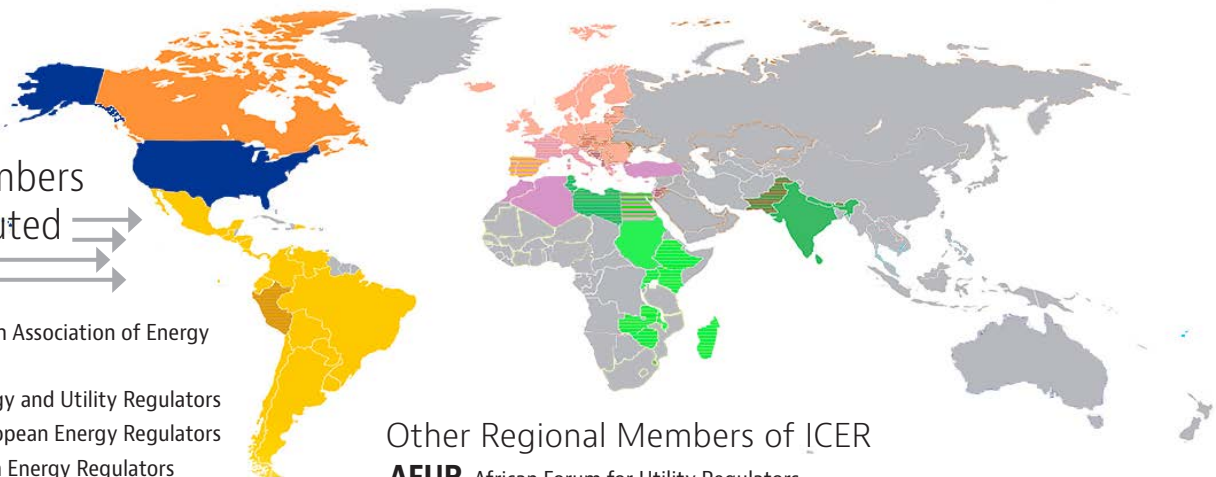
Regulatory Affairs Research Associate, Central Electricity Regulatory Commission



Rashmi Saurav works as a research associate in the Regulatory Affairs Division of Central Electricity Regulatory Commission in New Delhi, India. She graduated with an Integrated M. Tech. in

energy engineering in 2018. She has worked in the power sector since June 2018. Her interests lie in power sector economics and power markets. She believes policies and regulation are crucial to providing an environment for technologies to thrive. She embarked on this path not long ago, and with her backpack full of books, music, and a guitar, the journey of knowledge seems even sweeter.

Regional Members Who Contributed to this Issue



ARIAE Ibero-American Association of Energy Regulators

CAMPUT Canada's Energy and Utility Regulators

CEER Council of European Energy Regulators

MEDREG Mediterranean Energy Regulators

NARUC National Association of Regulatory Utility Commissioners

RAERESA Regional Association of Energy Regulators for Eastern and Southern Africa

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

ERRA Energy Regulators Regional Association

OOCUR Organization of Caribbean Utility Regulators

RERA Regional Electricity Regulators Association of Southern Africa



It has been an honor to serve as ICER's chair for the past year, and I look forward to continuing to work with my fellow regulators to strengthen this important international initiative.

For more than a decade, ICER has served as a forum for energy regulators from around the world to discuss issues of common interest, share best practices, and coordinate initiatives affecting regulators, energy service providers, and their customers.

Among other things, ICER aims to improve public and policy-maker awareness and understanding of energy policy and regulation and its role in addressing a wide spectrum of economic, environmental, and market issues.

ICER now comprises 13 regional organizations, representing regulators from more than 90 countries.

While the pandemic forced ICER to adjust its activities during 2020, ICER is on track to be stronger and more active as we move forward into the post-pandemic era.

First, we have resumed publication of the *ICER Chronicle* on a regular twice-annual schedule, highlighting the work of regional organizations and regulators and focusing on common issues we face in our work. We are committed to ensuring that the *Chronicle* is an effective venue for sharing the successes, challenges, and opinions of energy regulators from around the world, with editorial input from all of our regional organizations. Please let us know how the *Chronicle* can best serve your needs.

Second, while the pandemic forced a pause in planning for the World Forum on Energy Regulation, or WFER, I am pleased that preparations are under way for the WFER VIII to be held in Lima, Peru, in March 2023. My thanks to Jaime Mendoza Gacon, chair of the board of directors of Osinergmin, the Peruvian energy regulatory authority, for his continued commitment to hosting the conference and for Osinergmin's work in planning for what I expect will be a successful and important event. Read more about the preparations for WFER VIII on page 11 of this issue.

Third, the work of ICER's Women in Energy (known as ICER WIE) initiative remains strong. Launched in 2013, WIE has provided a platform for promoting the advancement of women in the energy sector, with mentoring, training, and networking opportunities. I am delighted that Kathleen Riviere-Smith, the executive director of the Organization of Caribbean Utility Regulators (OOCUR), is leading this important initiative following the departure of Una Shortall of the Council of European Energy Regulators, who started Women in Energy and did an incredible job of leading it for seven years. There is much to do. As Frauke Thies, the former executive director of Smart Energy Europe, said, "As long as we have to talk about equality, we haven't achieved it." For more about the Women in Energy program past and future, turn to our interview with Kathleen and Una on page 46.

Finally, we are developing plans to bring regulators together in webinars to inform ICER members of initiatives and developments taking place in other parts of the world. Energy regulation is complex and constantly changing. By hearing from our colleagues around the world about their experiences and insights, we can, as Daniel Schmerler Vainstein, my predecessor as ICER chair, so aptly put it, "strengthen a space where all members can find a comprehensive range of alternatives to excel their performance."

I want to extend my gratitude to all our fellow regulators who are contributing their time and effort to ICER's success. With your continued involvement and support, I am confident ICER will strengthen dialogue and cooperation among regulators of all nations.

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

FEATURES

- 12** **INNOVATION**
Regulatory Transformation Meets
Canada's Evolving Energy Needs
Regulatory Transformation: The Way Forward
Susanna Zagar
*Regulatory Transformation: After a Decade
of Change*
David Morton
- 17** **CONSUMER TRANSFORMATION**
The Current Trends in Transforming
the U.S. Power System
Carl Pechman, PhD
- 23** **INTERNATIONAL COOPERATION**
The Growing Role of Regulatory
Cooperation in the Mediterranean
Energy Transition
Daphné Lacroix
- 27** **MARKETS**
Completion of the EU Internal
Electricity Market: A Moving
Target?
Petra Kistner & Paul Giesbertz
- 30** **RENEWABLES**
The Growth of Renewable Energy in
India over the Decade
Ravindra Kadam and Rashmi Saurav
- 35** **REGULATION**
Shifting Regulatory Oversight of
the Regional Energy Market Propels
Investments and Power Trading in
Eastern and Southern Africa
Mohamedain E. Seif Elnasr
- 40** **REFORM**
Peruvian Electricity Reform:
Heading Toward Modernization and
Energy Transition
Jaime R. Mendoza Gacon

DEPARTMENTS

- 2** Letter from the Chair
- 4** Energy Essentials
- 43** Hot Off the Press
- 46** Who's Who

ARIAE News Briefs

ARIAE Turns 21!

The Ibero-American Association of Energy Regulatory Entities (ARIAE) was formally established in 2000 and today brings together 27 energy regulatory bodies from 20 Ibero-American countries, including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Spain, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Portugal, Puerto Rico, Dominican Republic, Uruguay and Venezuela, and the Central American market regulator, the Regional Electric Interconnection Commission.

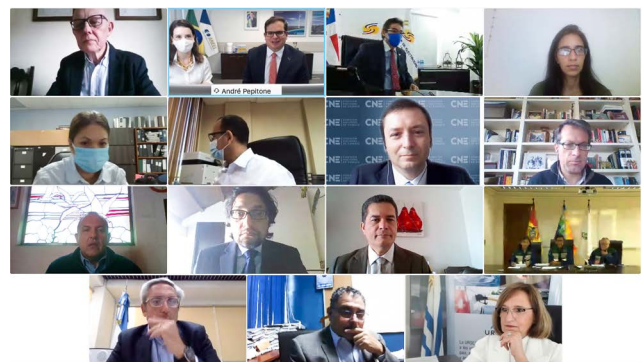
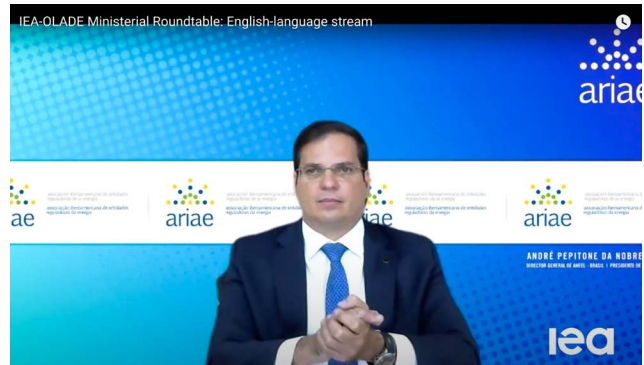
This is the most important forum for the exchange of energy regulators in Ibero-America for the purpose of sharing knowledge on regulation, promoting regulatory harmonization, and training at all levels, including in the fields of research and development.

ARIAE offers training courses

ARIAE promotes the Ibero-American School of Energy Regulation, associated with a group of seven universities, where the training courses organized by the association are provided. The school has two offices—one for electricity at the Pontifical Catholic University of Chile and another for hydrocarbons at the ESAN University of Peru.

The Ibero-American School of Energy Regulation courses offer the normative, technical, supervisory, and regulatory training to promote sustainable energy supply, from an economic and ecological point of view.

To explore training opportunities and reference materials, visit <https://www.ariae.org/presentacion/que-es-ariae>.



Photos Courtesy: Saulo Cruz/ANEEL



CAMPUT News Brief

■ CAMPUT Offers Energy Regulation Course Online

CAMPUT, Canada's Energy and Utility Regulators, runs an annual Energy Regulation Course designed for those who are new to the world of energy and utility regulation. This course has been offered as an intensive one-week residential program every summer for more than 15 years.

For 2021, CAMPUT's Energy Regulation Course will be offered online. CAMPUT welcomes participation from any ICER member. More details about the course, including timing, programing, and costs, are available on CAMPUT's website at www.camput.org.

If you have questions, please contact CAMPUT Executive Director Cynthia Chaplin at cynthia@camput.org.

CEER News Briefs

■ New Vice President Joins Board

In March 2021, Pedro Verdelho (Portugal) joined the Council of European Energy Regulators (CEER) board of directors as a new vice president. The other members of the CEER board are vice presidents Jean-Laurent Lastelle (France), Koen Locquet (Belgium), and Wolfgang Urbantschitsch (Austria). CEER is headed by President Annegret Groebel (Germany). CEER's 39 members and observers are the independent statutory national energy regulatory authorities from across Europe.



Pedro Verdelho

■ CEER Develops New Energy Transition Strategy

The CEER's work is driven by its current "3D Strategy" approved for 2019 until 2021 and by the implementation of the Clean Energy Package. The Ds in "3D" represent digitalisation, decarbonisation at least cost, and dynamic regulation. The work is delivered through CEER's annual work programmes. At the moment, CEER is developing a new strategy for the period of 2022 to 2025. The "Empowering Consumers for the Energy Transition Strategy" outlines the overall policy strategy for European energy regulators with a view toward promoting the energy transition and contributing to a carbon-neutral society and economy.

To learn about CEER regulators' activities in more detail, view CEER's annual report here: https://www.ceer.eu/eeer_publications/annual_reports.

■ CEER and BEUC Develop 2030 Vision for Energy Consumers

CEER and the European Consumer Organisation (BEUC) have renewed their Vision for Energy Consumers through 2030. Looking ahead to 2030 and the EU's 2050 sustainability and climate neutrality objectives, CEER and BEUC envision a future where effective policies and frameworks ensure that consumer rights are promoted and protected.

The core principles of the organizations' joint 2020 Vision—reliability, affordability, simplicity, protection, and empowerment—are timeless and universal, and are now reflected in Europe's energy laws.

The new CEER-BEUC 2030 Vision for Energy Consumers adds a new principle—inclusiveness—to ensure no one is left behind in the energy transition. The renewal and expansion of these core principles are driven by the deep transformation of our societies and economies toward a decarbonised and sustainable future.

Read the vision paper [here](#).

■ European Sustainable Energy Week Moves Online

The EU's Sustainable Energy Week (EUSEW) is a showcase of events bringing together public authorities, private companies, NGOs, and consumers to promote initiatives to save energy and move toward renewables for clean, secure, and efficient power. EUSEW was launched in 2006 by the European Commission.

The 16th edition of EUSEW will take place online on 25-29 October 2021 under the theme: "Towards 2030: Reshaping the European Energy System." The week consists of a three-day digital policy conference, the EU Sustainable Energy Awards Ceremony, a debate with ambassadors, and the second European Youth Energy Day as well as one-on-one video meetings, virtual stands, and other networking activities. Participants will also have access to an extended programme and digital sustainable energy events, known as Energy Days, which will take place all over Europe throughout September and October 2021. Registration launches in September 2021. Visit www.eusew.eu for more information.

Back again! The Eastern Partnership Workshop Continues Diplomatic Conversations on Energy Regulation

Written by Daniela Vilić

In accordance with the [Eastern Partnership](#) work programme, the Council of European Energy Regulators and the European Commission have organized eight workshops with the energy regulatory bodies from the EU's eastern neighbouring countries to foster relationships and exchange knowledge and experiences.

After a hiatus due to the COVID-19 pandemic, the 9th workshop in this series began on April 29, 2021, and included regulatory bodies of the Eastern Partnership countries, regulators from the EU and the [Energy Community](#) Contracting Parties, as well as ministry representatives and other bodies.

The first session of the workshop assessed the impact of COVID-19 on the energy sector. Jean-Laurent Lastelle, commissioner at the French regulatory body and a vice president of CEER, set the scene by presenting the results of [CEER's "First Analysis of the COVID-19 Pandemic's Effects on the Energy Sector"](#) report. This interim report highlights the pandemic's effects on the energy market, identifies approaches to protect energy customers, and summarises the national regulatory authorities' (NRAs) most important lessons and experiences after one year.

In a tour de table, the regulatory bodies of Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova, and Ukraine gave an overview of the impact of COVID-19 on the energy sector in the Eastern Partnership countries and of their response, discussing challenges

and effects on consumers and market players. It became evident that the experiences of Eastern Partnership countries were similar to those of EU member states.

The COVID-19 crisis brought some challenges as well as opportunities. One regulator reported a drop in budget. Others reported delays in the implementation of projects caused by the effects of the pandemic on their organisations and sectors. However, the crisis also had a positive impact: Digitalisation was boosted in many different areas, and regulatory authorities have gained even more trust.

The second session of the workshop focused on the topic of "just transition" and the protection of the vulnerable. The workshop provided a good overview of the EU's concept of the [Just Transition Mechanism](#), a financing tool to provide monetary support for the climate-neutral transition of vulnerable communities, and the Just Transition Fund, currently containing €19.3 billion of available investment money. Attendees learned about the potential of just transition in the Eastern Partnership countries and how these countries are tackling energy poverty and addressing the protection of vulnerable customers. Next, the Energy Community Regulatory Board Secretariat presented the findings of an ongoing study on addressing energy poverty in the Energy Community Contracting Parties. Many initiatives are ongoing in the Eastern Partnership countries. As in many other countries, a lack of available data slows down development. Renewable energy sources are becoming more and more important, and a clear trend towards decarbonisation is evident.

The second session was rounded off by the European Investment Bank presenting its perspective on the correlation between tariffs and energy poverty and the challenge of combining the reduction of tariffs with the efforts of decarbonisation.

The agenda and the presentations can be accessed [here](#).



raland - stock.adobe.com

CEER is fit for innovation through Dynamic Regulation

Written by Nadia Horstmann

As energy regulators, we believe that regulation must be stable but not static and it must fit with fast-changing environments and market evolution.

Dynamic regulation could be an efficient means for decarbonisation and digitalisation and driving growth and innovation within the energy system. [CEER recently published a report](#) that offers an initial look at the use of dynamic regulation tools among Europe's national regulatory authorities and related considerations.

Energy regulators already rely on experimental regulatory tools to test and anticipate future scenarios. The main sectors where dynamic regulation tools have been implemented are the tariff structure, pricing and revenue controls, and smart metering. The following tools of dynamic regulation are commonly used:

- Regulatory sandboxes
- "Classic" regulation tools such as incentive regulation
- Increasing the participation/consultation of market participants in processes
- Pilot projects, pilot regulations, and regulatory experiments.

A dedicated space for "dynamic regulation" on the CEER website showcases examples of what energy regulators are doing. You can also subscribe to upcoming newsletters to receive updates on this topic. Have a look here: <https://www.ceer.eu/dynamic-regulation>

MEDREG News Briefs

MEDREG Elects New Presidency Board

On November 25, 2020, during its 30th General Assembly meeting, the Association of Mediterranean Energy Regulators (MEDREG) members elected their [new president](#) for the next two



Petrit Ahmeti

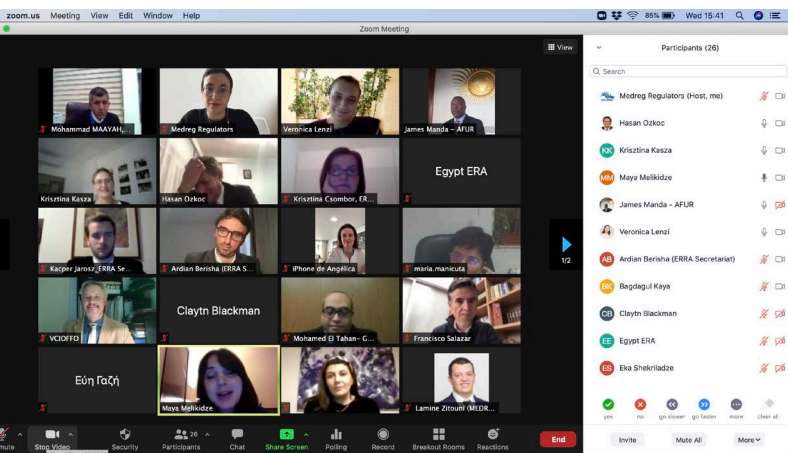
years: Mr. Petrit Ahmeti, chairman of the Board of the Albanian Energy Regulator. Mr. Ahmeti previously served as MEDREG vice president. He has also been a long-time member of MEDREG working groups, being fully engaged in the association's priorities and challenges. Three vice presidents were elected to support the new president: Eng. Abdellatif Bardach, president of the Moroccan Electricity Regulator and Eng. Karem Mahmoud, CEO of the Egyptian Gas Regulatory Authority, joined the Permanent Vice-President Mr. Stefano Besseghini, president of the Italian Regulatory Authority for Energy, Networks and Environment. Along with the election of the presidency board, the 30th General Assembly elected the [new MEDREG working groups' chairmanship](#).



Abdellatif Bardach Karem Mahmoud Stefano Besseghini

9th High-Level Meeting of Regional Associations of Emerging Markets Takes Place Virtually

The objective for the 9th annual MEDREG and ERRA (Energy Regulators Regional Association) meeting was to continue offering a high-level exchange platform for the associations of regulators representing emerging economies to develop cooperation and exchange of experiences in several areas of energy regulation. Reflecting on 2020, attendees focused on the regulatory implications of the pandemic and impacts on



Courtesy of MEDREG

regulatory associations. The meeting also included technical discussions such as energy transition and renewables regulation.

MEDREG Launches the GAS Working Group Consultation

In February 2021, MEDREG launched the GAS Working Group Consultation, a discussion with transmission system operators, distribution system operators, shippers and traders, national and international financial institutions, EU bodies, research centers and think tanks, trade associations, concerned consumers, and international organizations and associations related to gas that are active in the Mediterranean region.

This program collected inputs from a diverse array of stakeholders on the statements and recommendations of the report. The scope of the consultation was threefold:

1. Supplement the information concerning the current use of natural gas in MEDREG countries and the strategies in place for the future development of gas markets and their role in the energy-transition;
2. Seek evidence on the sectors where gas is bound to provide a major support in reducing the carbon footprint in the Mediterranean and understand the impact of hydrogen and biogas as complementary sources;
3. Discuss the role of regulators in ensuring a fair and sustainable energy transition—with a focus on the standards of gas quality, access to gas markets and management of congestions, and consumer protection.

MEDREG will evaluate collected responses and integrate them into a conclusions document that will examine the inputs received in light of MEDREG's stance and indicate how they will feed the future work of the association by the end of the summer.

Joint MEDREG - ECRB workshop: Challenges and opportunities in deploying renewables into electricity networks and balancing systems

On April 15 2021, the Energy Community Regulatory Board (ECRB) and MEDREG held a joint virtual workshop to exchange expertise and implementation practices in MEDREG and ECRB member countries on the challenges and opportunities in deploying renewable energy sources into electricity networks. Joint workshops are part of the well-established [cooperation between ECRB and MEDREG](#). Since 2014, this cooperative has focused on harmonising regulatory rules across the Mediterranean, East European, and Black Sea regions. Joined by transmission system operators from the ECRB and MEDREG regions, the regulators exchanged best practices in dealing with the challenges that electricity generation from decentralised renewable sources bring to the system and its operation.

NARUC News Briefs

■ Responding to COVID-19

The U.S. National Association of Regulatory Utility Commissioners (NARUC), like much of the world, spent 2020 engaged in the 'pandemic pivot'—shifting from on-site and in-person activities to virtual engagement. Despite these challenges, NARUC convened all of its regularly scheduled meetings, released several reports and resources, and welcomed new leadership.

NARUC's members, likewise, relied on various platforms to continue serving the public interest, such as hosting virtual public comment meetings and online hearings while operating remotely.

One of NARUC's earliest responses to the pandemic was the creation of a COVID-19 [microsite](#), with pandemic news and information that included a state response tracker. The tracker focused on: (1) the status and duration of state-level moratoriums on utility disconnections; (2) an overview of cost recovery requirements and guidance for regulated utilities; (3) details related to repayment plan requirements and guidance; and (4) references to state orders, dockets,

and/or legislative actions related to utilities and the pandemic. Developed and managed by NARUC's research arm, the National Regulatory Research Institute, the state tracker was cited often across numerous trade and national press outlets.

NARUC's then-president Brandon Presley created the [Emergency Preparedness, Recovery and Resiliency Task Force](#), with a Special Subcommittee to Review State and National Response to COVID-19. The task force is a response to extreme weather events experienced across many regions of the United States, natural disasters, and the national emergency from the COVID-19 pandemic. These events heightened the nation's collective awareness of the need for access to energy and the importance of ensuring the continued delivery of essential energy services. The intensified focus on protecting the reliability of vulnerable energy systems and creating more resilient infrastructure will enable a better response to future large-scale and catastrophic events. The task force is comprised of a balanced, diverse group of NARUC members, stakeholders, and experts who will consider policy issues facing the regulatory community related to emergency preparedness, recovery, and resiliency.

Along with the pandemic, throughout 2020 to the present, we have witnessed myriad calls for social justice reforms across the country. In December 2020, NARUC held a webinar focused on the pandemic: [The Intersection of COVID, Race, the Recession & Utility Regulation and their Impact on Utility Regulation](#). The webinar participants discussed how these disparities adversely affected the utility industry's consumers and workforce.

Meeting the Challenges of Cybersecurity Threats

An ongoing concern of increasing importance is cybersecurity. NARUC has continued to provide cyber resources to its members and the broader regulatory community. Its Committee on Critical Infrastructure (CI), Center for Partnerships and Innovation, International Programs, and the National Regulatory Research Institute (NRRI) have all supported efforts to expand NARUC's suite of cyber resources. Goals and activities for CI are to:

1. Identify emerging utility policy challenges pertaining to cybersecurity and infrastructure resilience.
2. Connect state commissions with expertise and strategies to navigate complex decision-making.
3. Build relationships, develop resources, and deliver

MODERNIZED GRIDS CAN INCREASE CYBERSECURITY RISKS

Energy regulators manage risk, ensure prudence of investment, and promote grid resilience.

As cybersecurity threats evolve and increase in their sophistication, USAID is supporting regulators to meet these challenges.

CRITICAL INFRASTRUCTURE RISKS:

INFORMATION TECHNOLOGY (IT)
OBJECTIVE: Confidentiality
 (Protection of Sensitive and Private Information)

OPERATIONS TECHNOLOGY (OT)
OBJECTIVE: Availability (Safe and Reliable Operations)

✓ Regulators Should:

- Engage with utilities and other stakeholders on response and recovery
- Ensure utilities are implementing sufficient and cost-effective OT and IT controls
- Encourage information sharing for better preparedness
- Enforce security of supply standards
- Evolve as best practices continually change

✗ Regulators Should Not:

- Require utilities to perform duplicative work/reporting
- Conduct cybersecurity maturity audits of utilities
- Store confidential utility critical energy infrastructure information (CEII)
- Do nothing because it is assumed the utilities have it covered

USAID | National Association of State Energy Commissioners

training to foster cybersecurity and resilience knowledge and capabilities within public utility commissions.

On January 15, 2021, CI hosted a webinar on the SolarWinds attack, which was discovered in December 2020. Future activities from NARUC include a white paper that examines cybersecurity insurance as a mechanism that utilities use to manage cybersecurity risk. The paper will highlight the intent and purpose of cybersecurity insurance, as well as costs and benefits.

As part of its NRRI Insights series, "[Understanding Cyber Attacks and Available Cybersecurity Technologies](#)" is a report describing how various technologies that produce and transmit data through connections to the grid create increased cybersecurity vulnerabilities.

NARUC's International Programs Department, with support from the United States Agency for International Development, also created an infographic highlighting the role of energy regulators in meeting the challenges presented by cybersecurity threats.

Electricity Planning and Transmission Task Forces

In February 2021, NARUC concluded its Task Force on Comprehensive Electricity Planning, a joint two-year initiative with the National Association of State Energy Officials. Emerging technologies, decreasing costs, consumer preferences, new energy service providers, and state and local efforts are driving significant growth in distributed energy resources

such as solar, storage, energy efficiency, demand management, and microgrids. These investments increasingly require regulatory and policy innovation and a greater emphasis on planning to overcome system complexities and avoid unnecessary costs associated with operating the grid.

The U.S. Department of Energy provided support for the task force, which culminated with the release of several deliverables: *Blueprint for State Action for a More Efficient, Customer-Centric Grid*, five [Roadmaps for Comprehensive Electricity Planning](#), an online library, and additional resources for states.

In June 2021, NARUC announced a first-of-its-kind Joint Federal-State Task Force on Electric Transmission with the Federal Energy Regulatory Commission, which will explore transmission-related issues to identify and realize the benefits that transmission can provide, while ensuring that the costs are allocated efficiently and fairly. Greater federal-state coordination and cooperation is essential to address numerous issues, including how to plan and pay for new transmission infrastructure and how to navigate shared federal-state regulatory authority and processes.

■ Kjellander Connects the Dots

At the November Annual Meeting and Education Conference, Idaho Regulator Paul Kjellander was installed as NARUC president, with Judith Jagdmann (Virginia) as first vice president and Michael Caron (Connecticut) as second vice president. He introduced a new multi-year theme, Connecting the Dots: Innovative/Disruptive Technology and Regulation, that is focused on exploring the many different emerging technologies and innovations affecting electricity, natural gas, telecommunications, and water/wastewater utilities. President Kjellander says the theme was developed collaboratively with Commissioners Jagdmann and Caron, who will adopt it for their presumed terms as president, which is a break from the usual single-term, one-year theme.



Paul Kjellander

"An opportunity to explore alternative and optional forms of regulation that might incent the implementation of new technology and practices can also emerge from this topic," he said during the meeting, during which time he also acknowledged that the challenges presented by the pandemic have "given us all some new insights on how to better serve the members of NARUC."

RAERESA News Briefs

■ New Energy Regulators Established in Djibouti and Democratic Republic of Congo

Late 2020 witnessed the establishment of two electricity regulators in the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA) region. They are the Multi-sectoral Regulatory Authority of Djibouti and Regulatory Authority of Electricity Sector of Democratic Republic of Congo (DRC), which are now operational both in law and in fact.

Hopes are high that the new regulator for the DRC can unlock its immense hydro potential. Experts estimate the DRC's hydro potential to be around 100,000 megawatts, of which 40,000 megawatts are on one site.

■ The Leadership Transition at EPRA

Daniel Kiptoo Bargoria is now the Director General of the Energy and Petroleum Regulatory Authority of the Republic of Kenya and has been appointed Chairperson of the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA).



Daniel Kiptoo Bargoria

SAFIR News Briefs

■ SAFIR appoints new chair

Mr. Samdrup Thinley, CEO of the Bhutan Electricity Authority, has been appointed as chairman of the South Asia Forum for Infrastructure Regulation (SAFIR) effective April 19, 2021. He will hold this position for two years. He



Samdrup Thinley

takes over from Mr. Mohammed Abdul Jalil, Chairman of the Bangladesh Energy Regulatory Commission.

■ SAFIR holds annual meetings virtually

SAFIR conducted its 27th annual Steering Committee meeting and its 21st annual Executive Committee meeting on April 19, 2021. Due to the ongoing COVID-19 pandemic and restrictions on travel, these meetings were conducted virtually.

ICER's World Forum on Energy Regulation Returns in 2023

Planning for the postponed WFER is underway.

The 8th edition of the World Forum on Energy Regulation (WFER) will now take place in Lima in March 2023. The event was scheduled for March of 2021, but due to the COVID-19 pandemic, ICER members agreed to postpone the event until better global health and mobility conditions are reached.

The WFER is a global platform that offers a forum for meaningful conversations on energy regulation spanning all continents—which is why we want to give all regulators and stakeholders the opportunity to participate in a live event and make sure their voices are heard.

The event will take place in the Lima Convention Center, which has previously hosted significant international events, such as the Asia Pacific Cooperation Forum and, more recently, the Pan American Games in 2019. This venue was chosen in October 2019, when ICER Steering Committee members visited Lima for ICER's 10th anniversary and the first preparatory meeting of the 8th WFER. During this visit, ICER

members also chose a central theme—The Energy Transformation Challenge: competitiveness and sustainability of energy markets, opportunities and achievements. The four pillars of this theme include competitiveness, institutionality, energy transition, and universal energy access.

These pillars will help form the narrative of the forum, which will include a wide range of activities such as an exclusive training day, keynote speeches, plenary and concurrent sessions with high-level speakers, and dedicated roundtables for current and former commissioners. ICER subcommittees will oversee the content and program arrangements.

To move forward with the content arrangements, on July 14, 2021, Peru hosted a virtual event to discuss the impact of the pandemic in the energy sector. After the virtual event, ICER's planning subcommittees will finalize content and launch the speakers call for the next WFER.

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 official Touristic Information](#).

Regulatory Transformation Meets Canada's Evolving Energy Needs

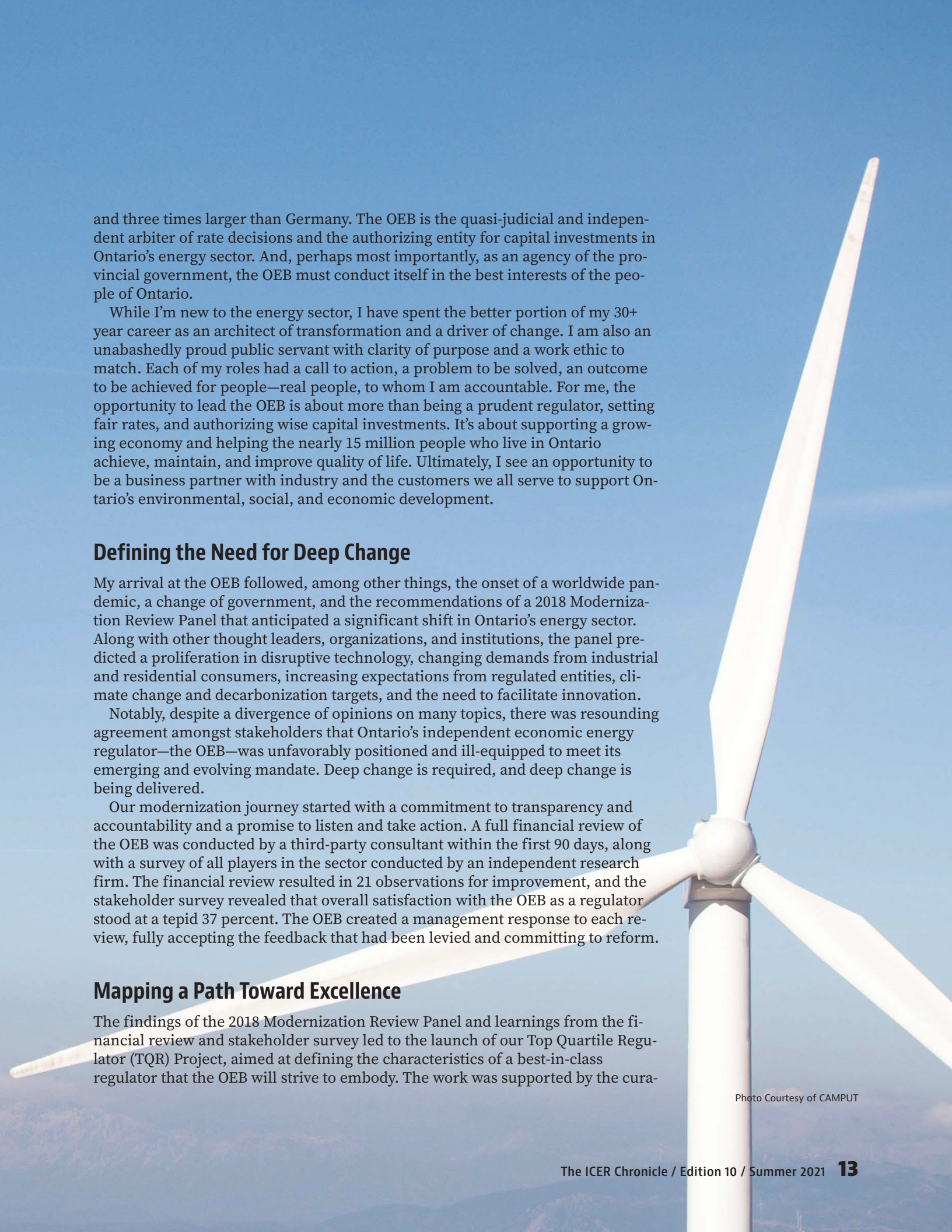
In Canada, the need for regulatory transformation has never been greater. From east to west, Canadian regulators have answered and are answering the call for change.

Regulatory Transformation: The Way Forward

Written by Susanna Zagar, CEO, Ontario Energy Board

We are living in a transformational time. The COVID-19 pandemic has upended every aspect of our lives and caused us to question everything we do, how we do it, and why. Around the world, the nexus between energy systems, quality of life, and the economy has never been more in focus. And the need for leaders who bring purpose, passion, and unwavering commitment to public value has never been greater.

Ontario's energy sector is an ecosystem, a complex network of organizations that function together to power the province. The integration of that ecosystem and the expertise of its players cannot be understated. As the independent, economic regulator of the sector, the Ontario Energy Board (OEB) protects the interests of millions of electricity and natural gas consumers and oversees the entities which generate, transmit, and distribute energy across a vast mass of land that is more than a million square kilometers—three times larger than the State of Texas



and three times larger than Germany. The OEB is the quasi-judicial and independent arbiter of rate decisions and the authorizing entity for capital investments in Ontario's energy sector. And, perhaps most importantly, as an agency of the provincial government, the OEB must conduct itself in the best interests of the people of Ontario.

While I'm new to the energy sector, I have spent the better portion of my 30+ year career as an architect of transformation and a driver of change. I am also an unabashedly proud public servant with clarity of purpose and a work ethic to match. Each of my roles had a call to action, a problem to be solved, an outcome to be achieved for people—real people, to whom I am accountable. For me, the opportunity to lead the OEB is about more than being a prudent regulator, setting fair rates, and authorizing wise capital investments. It's about supporting a growing economy and helping the nearly 15 million people who live in Ontario achieve, maintain, and improve quality of life. Ultimately, I see an opportunity to be a business partner with industry and the customers we all serve to support Ontario's environmental, social, and economic development.

Defining the Need for Deep Change

My arrival at the OEB followed, among other things, the onset of a worldwide pandemic, a change of government, and the recommendations of a 2018 Modernization Review Panel that anticipated a significant shift in Ontario's energy sector. Along with other thought leaders, organizations, and institutions, the panel predicted a proliferation in disruptive technology, changing demands from industrial and residential consumers, increasing expectations from regulated entities, climate change and decarbonization targets, and the need to facilitate innovation.

Notably, despite a divergence of opinions on many topics, there was resounding agreement amongst stakeholders that Ontario's independent economic energy regulator—the OEB—was unfavorably positioned and ill-equipped to meet its emerging and evolving mandate. Deep change is required, and deep change is being delivered.

Our modernization journey started with a commitment to transparency and accountability and a promise to listen and take action. A full financial review of the OEB was conducted by a third-party consultant within the first 90 days, along with a survey of all players in the sector conducted by an independent research firm. The financial review resulted in 21 observations for improvement, and the stakeholder survey revealed that overall satisfaction with the OEB as a regulator stood at a tepid 37 percent. The OEB created a management response to each review, fully accepting the feedback that had been levied and committing to reform.

Mapping a Path Toward Excellence

The findings of the 2018 Modernization Review Panel and learnings from the financial review and stakeholder survey led to the launch of our Top Quartile Regulator (TQR) Project, aimed at defining the characteristics of a best-in-class regulator that the OEB will strive to embody. The work was supported by the cura-

Photo Courtesy of CAMPUT

tion of a panel of international experts on energy regulation. Our symposium, *Energize, Optimize, Modernize: Towards Regulatory Excellence*, held virtually in February 2021, put Ontario's regulator back on the map, and kicked off our global research initiative.

What we learned from our TQR and symposium is that top quartile regulators have much in common, including a strong sense of responsibility and drive for relentless improvement. They also share certain attributes:

- **Accountability**

While being independent in its decision-making, the regulator's governance should reflect that it is accountable for the advancement of the public interest.

- **Certainty**

Regulatory processes should be as predictable as possible. Regulated entities should understand what is expected of them and regulatory proceedings should follow a dependable schedule.

- **Effectiveness**

The regulator should be clear about the outcomes it is aiming to achieve. This includes having a clear rationale for how regulatory policies and processes deliver on statutory objectives. It should be transparent with how success is measured by tracking outcomes over time.

- **Efficiency**

The regulator should strive to find process improvements in all its functions to increase productivity and value for money.

- **Independence**

The regulator should be recognized as making fair and impartial decisions, free of undue influence from government or others, and focused on

Read the [Financial Review](#) and [OEB Management Response](#).

Read the [OEB Management Response to the Stakeholder Survey](#).

Read the [TQR Report](#) and [Executive Summary](#).
Watch the [Symposium](#).



TOP QUARTILE
REGULATOR
REPORT

its core economic regulation mandate.

- **Innovation**

The regulator should modernize its processes and facilitate future innovations in the energy sector.

The TQR Report was a watershed for the OEB. Through our work, we learned that no single jurisdiction does everything exceptionally well. We learned that we must adapt, rather than simply adopt, the best practices from around the world by applying them to Ontario's unique and complex energy ecosystem. We learned that succinct and powerful statements of purpose provide clarity and transparency of mandate and can define an ethos.

Words matter, and we have chosen ours carefully:

Our **vision** is to be a trusted regulator that is recognized for enabling Ontario's evolving economy and improving the quality of life for the people of this province who deserve safe, reliable, and affordable energy.

Our **mission** is to deliver public value through prudent regulations and independent adjudicative decision-making, which contributes to Ontario's economic, social, and environmental development.

Our **purpose** is to oversee Ontario's provincial energy markets, protect the interests of individuals, and support the collective advancement of the people of Ontario.

The OEB modernization journey is well underway and, while I entered the energy sector as an outsider, I am not new to transformation. I know that meaningful change is not random or coincidental. It is deliberate and disciplined. It is well-planned and well-executed, with courage and humility.

At the OEB, we have mapped a multi-year modernization plan. We aspire to become a top-performing regulator and it is only when those we serve recognize and regard us a top quartile regulator that we can stand back from the transformation and know that we have delivered public value for the people of Ontario.



Photo: JFL Photography - stock.adobe.com

Regulatory Transformation: After a Decade of Change

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

A decade is a long time in any industry, but the changes that have occurred in the energy sector have been far-reaching over the past 10 years. In British Columbia (BC), Canada, for example, we've seen declines in the cost of new energy generation, flattening utility loads, increasing wildfire and cyber security risks, and government policy initiatives aimed at meeting BC's greenhouse gas (GHG) reduction targets through greater electrification. In addition, the worldwide COVID-19 pandemic has had a profound impact on all aspects of our lives, including the way we work and our demand for energy.

So, what have been the most significant regulatory developments since I started at the British Columbia Utilities Commission 10 years ago?

One of the first areas we focused on was to clarify our role. In 2012, after an inquiry into emerging alternative energy solutions, we established the principle that we should only regulate where necessary and only to protect the public when monopolistic power is present. This principle has been foundational in our subsequent inquiries, including the [Thermal Energy Services Inquiry](#) (2013) and the [Regulation of EV Charging Service Inquiry](#) (2019).

We also obtained clarity from the BC government regarding our role in delivering on broader provincial policy objectives. There can be a misconception that ratepayers and taxpayers are the same, but this is not the case. The government clarified that our focus is on utility ratepayers, and if there is a policy item that the government would like us to advance, they will provide us with specific direction to support it. This was critical guidance that has informed our cost/benefit analysis of utility proposals. Ratepayers are at the heart of all we do.

Over the last decade, we have taken steps to review our regulatory and market arrange-

“Ratepayers are at the heart of all we do.”

ments to ensure the market transformation occurs in a way that protects and advances ratepayers' interests and enables them to benefit from innovation and new services. Increased collaboration has been extremely important in this, as energy is everyone's business, and there are more people involved in it now than ever.

A key change has been in our approach to long-term resource planning, as we are experiencing increased uncertainty in the energy sector. The past has never been a great predictor of the future, but the last 10 years of flat load growth and dramatic decline in renewable energy costs are outside of any "range of reasonableness" previously envisioned. We are therefore looking at ways we can ensure our approach to reviewing these applications remains effective.

We have also increased our focus on incentive regulation, to ensure that ratepayers are better protected, and that utilities are incented to act more in line with ratepayer interests. Approximately half of our utilities are regulated through some form of performance-based regulation and we are investigating whether to expand this. Our aim is to change the central question of regulation from "Did we pay the right amount for what we got?" to "Are we paying the right amount for what we want?"

There are new emerging risks, such as wildfires and cybersecurity, where responsibility for control is shared by several public agencies. We have started to address these risks by working with emergency measures organizations to better understand responsibility and accountability. We also recently required our utilities to file their emergency response plans with us. Another risk—global pandemics—was not even on the radar a decade ago, but I am pleased with how well our organization was able to respond to the challenge.

On the natural gas side, there is a significant move by our utilities to incorporate blends of biogas and renewable gas. The BC government's CleanBC plan has targets of 15 percent renewable content for renewable natural gas. The BCUC approved BC's largest gas utility creating an almost \$5 million per year fund for clean growth innovation to assist in the energy transition. The first project is looking at the compatibility of the distribution system for hydrogen injection.

Over the past several years, the BCUC's role has expanded due to a number of factors, including: innovations in the energy and utility industry, increased compliance activity such as Mandatory Reliability Standards-related requirements, the de-

“Our aim is to change the central question of regulation from “Did we pay the right amount for what we got?” to “Are we paying the right amount for what we want?”

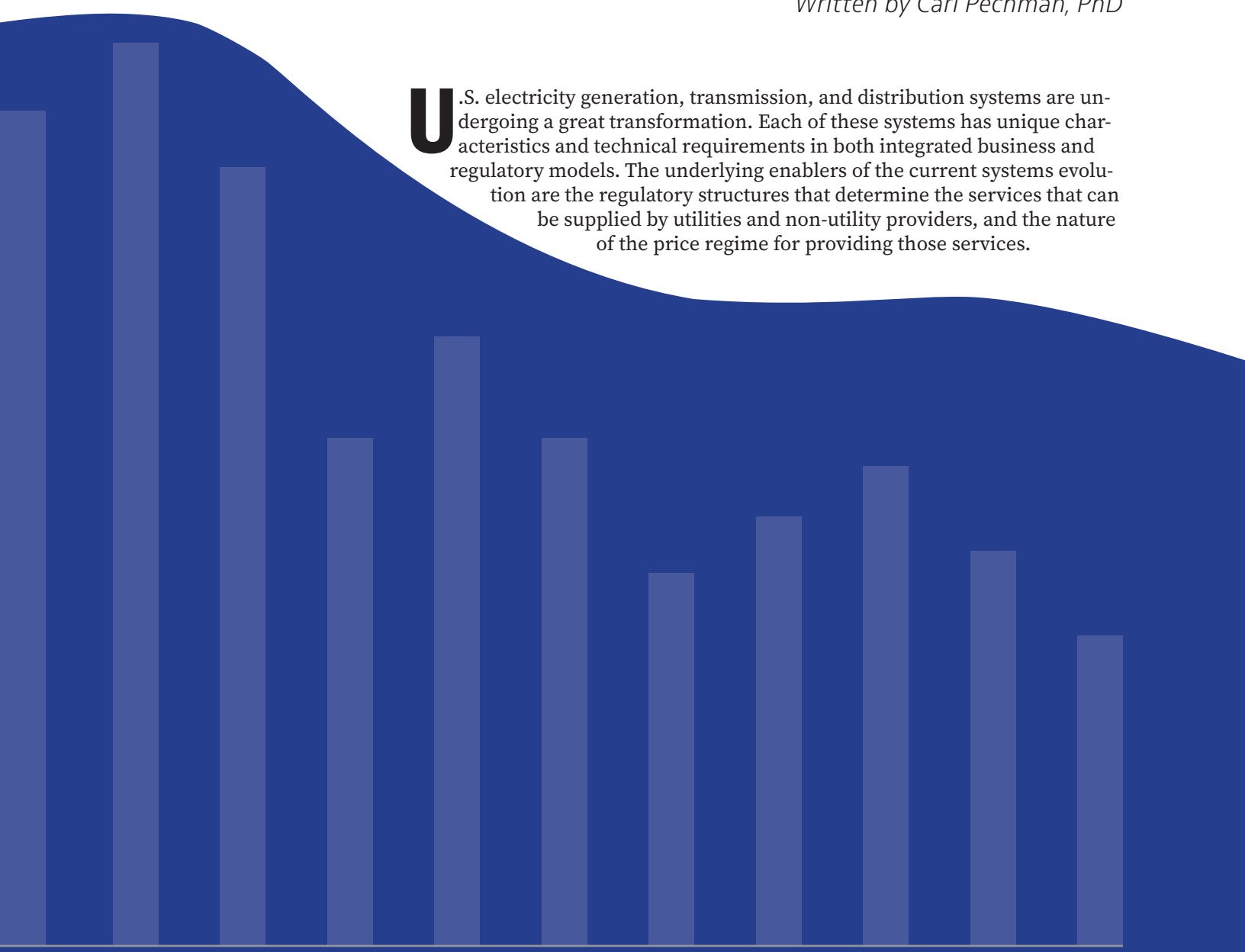
velopment of more small utilities, enhanced oversight of existing energy utilities, inquiries to clarify jurisdiction, and the introduction of BC's Fuel Price Transparency Act under which we now monitor retail gasoline and diesel prices. In addition, there is a significant volume of applications coming from larger utilities, as they look to renew, maintain, and expand existing infrastructure; and the number of orders and decisions issued by the BCUC continues to increase year after year. To fulfill the organization's important mandate and support the expansion of the BCUC's role, we have been actively working to right-size our organization and effectively engage the public in our work.

In addition, we completed a fairly significant restructuring when I began as chair and CEO, to eliminate siloes within our organization. We moved away from a traditional hierarchical structure, with formal lines of authority and a fairly rigid division of labour, to a matrix structure where staff can move fluidly between different teams. This has significantly enhanced collaboration and our ability to effectively address market transformation challenges. In addition, we have encouraged a more flexible approach to work both in and out of the office, and as a result of these changes I am pleased to say that we have been recognized as one of BC's Top Employers for the past two years.

Looking back, I am amazed with how far we have come over the past decade. I am very proud of my team—senior management, staff, and commissioners. I recognize that in, many ways, what's been accomplished is just the beginning and much more needs to be done, and I look forward to being part of the transition and adding value in the places where we are best able to do so.

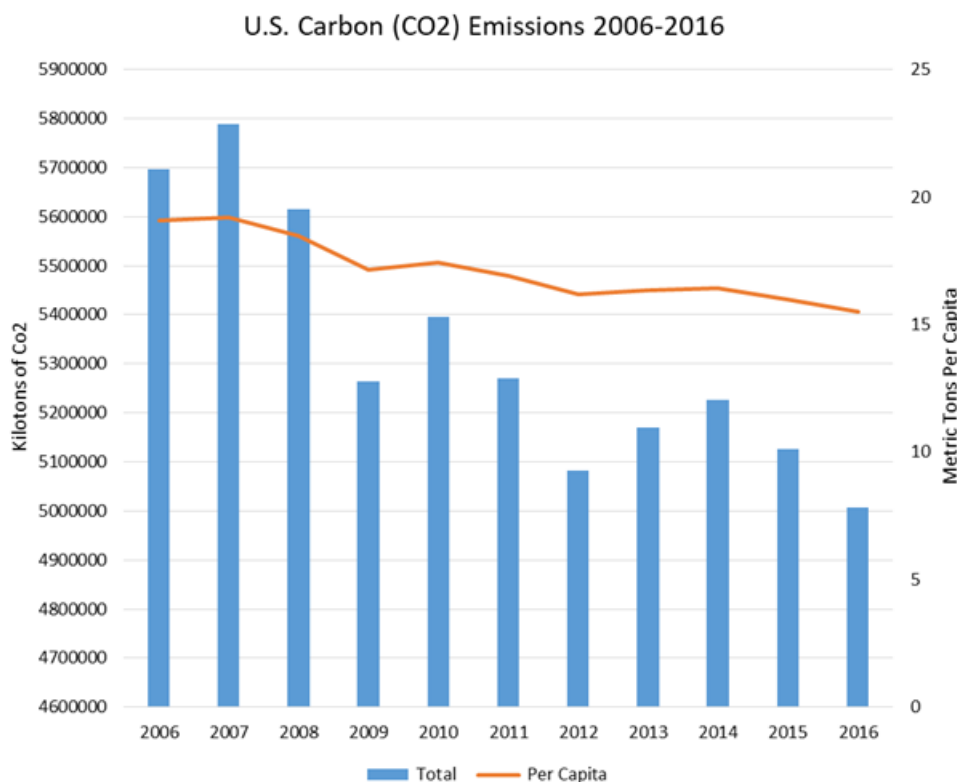
The Current Trends in Transforming the U.S. Power System

Written by Carl Pechman, PhD



U.S. electricity generation, transmission, and distribution systems are undergoing a great transformation. Each of these systems has unique characteristics and technical requirements in both integrated business and regulatory models. The underlying enablers of the current systems evolution are the regulatory structures that determine the services that can be supplied by utilities and non-utility providers, and the nature of the price regime for providing those services.

Figure 1. Trend in U.S. Decarbonization



(Source: World Bank Data, <https://www.macrotrends.net/countries/USA/united-states/carbon-co2-emissions>.)

There are two main catalysts supporting the transformation of the U.S. electric system: decarbonization—through a fundamental change in the means of generation—and the emergence of the prosumer.¹ Complementing these forces is the increased electric demand due to broad electrification across society to support deep decarbonization.

Decarbonization

The United States has started on a downward trajectory of reducing carbon emissions. The path has been slow, with some ups and downs (Figure 1). This reduction is occurring without federal carbon policy coordination and is largely the result of shifts in the relative price of coal and natural gas, renewable subsidies, and state policies.

Additionally, there is a change in the U.S. electric generating fleet, with three important trends. First, the decline in coal-fired generation; second, the increase in natural gas-fired generation; and third, the increase in renewables, such as wind and solar production. The reduction in coal generation is generally due to a decrease in the price of generating with natural gas, largely as a consequence of the wide development of fracking in the United States.

State policies have encouraged the development in two ways. The first is renewable energy credits (RECs); the second is net-energy-metering. RECs are credits paid to entities that generate electricity from renewable sources. These programs are administered by individual states, with terms and conditions that vary widely. Net-energy metering, or NEM, is a system where the customer “runs the meter backwards”

¹ The word “prosumer” was introduced by Alvin Toffler in his book, *The Third Wave* (1981) to describe the merging of the roles of consumers and producers in the information age—the third wave (agriculture was the first wave and industrialization was the second wave).

to account for the power that they produce on their premises. Net-energy metering pricing systems are overseen by state public utility commissions (PUCs).

One controversial aspect of net-energy metering is the issue of revenue shifts between participating and non-participating customers. Critics argue that rates are typically not designed in an efficient manner: Fixed costs are recovered in the variable portion of the rate, and, when a customer sells back to the system at the retail rate, they are compensated more than the costs they are avoiding. Those costs then need to be recovered from the remaining non-NEM participants. A number of state PUCs have begun to investigate more efficient and equitable forms of NEM pricing.

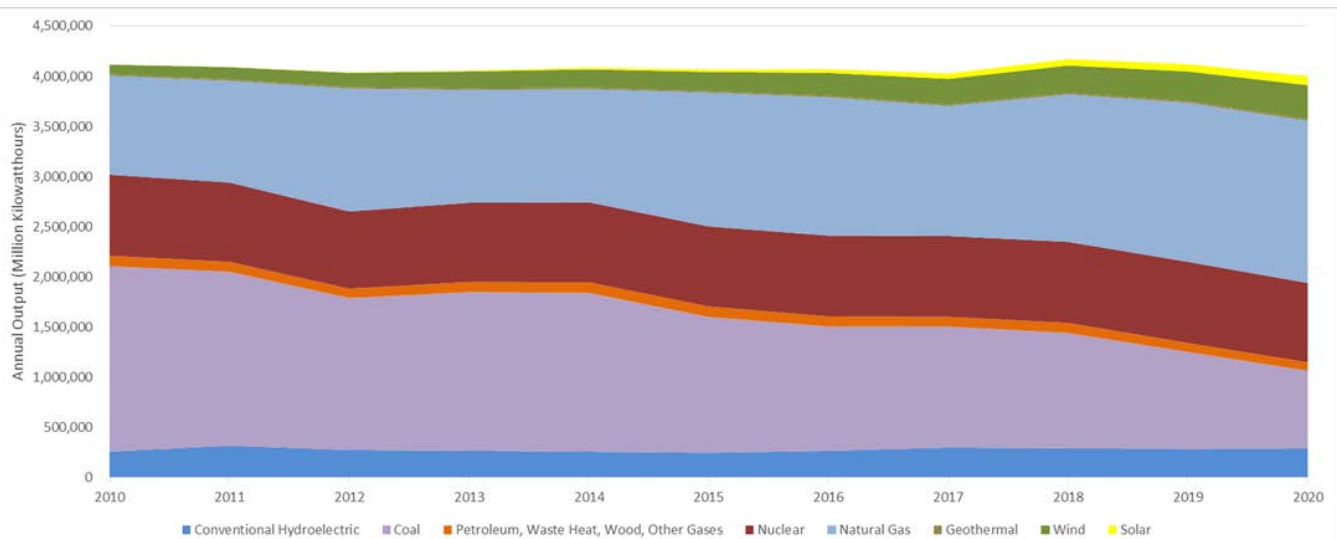
The third factor that has led to decarbonization of electric generation has been federal tax subsidies. These come in two forms, investment tax credits and production tax credits. Investment tax credits are commonly used for solar installations, where a credit is issued as a percent of the installed cost of a project, thereby reducing the project cost. The production tax credit, or PTC, is an alternative approach commonly used for wind generation and provides additional revenues for generation. The PTC makes revenues for wind generation equal to the market price of electricity, plus the value of the RECs.

The implementation of decarbonization and renewable policies has raised new regulatory questions. One is whether the underlying practice of rate design, which allocates fixed cost to the variable portion of the rate, results in efficient customer consumption and investment decisions. The decline in coal generation—and the early retirement of coal units—has led to regulatory challenges associated with stranded cost recovery. Securitization, in conjunction with state legislation, is one way to mitigate the effects of recovering the stranded cost of generators that have been retired early because of displacement by natural gas and renewables.

Changing Role of the Customer

Increasingly, in the United States electric consumers are being transformed into prosumers, or customers who not only consume electricity but also produce it. Customers now produce rather than just consume power. More than 2 million customer rooftops in the United States now have solar panels, which reduces both the customer’s demand on the electric system and the power generated into wholesale markets. Customers are also becoming more responsive to both price and reliability needs of the power system. Demand response programs have facilitated the in-

Figure 2. The Changing Generation Mix in the U.S.



(Source: Based on data found at: Table 7, Electricity Net Generation: Total (All Sectors) U.S. Energy Information Administration (EIA) – Data)

corporation of intermittent renewable generation on the grid. During periods where there is a drop in generation, demand response programs curtail load in an orderly manner, enabling the system to maintain a constant frequency. Increasingly, prosumers perform important functions in the operation of the electric system, a role that will increase in importance with the proliferation of variable renewable generation.

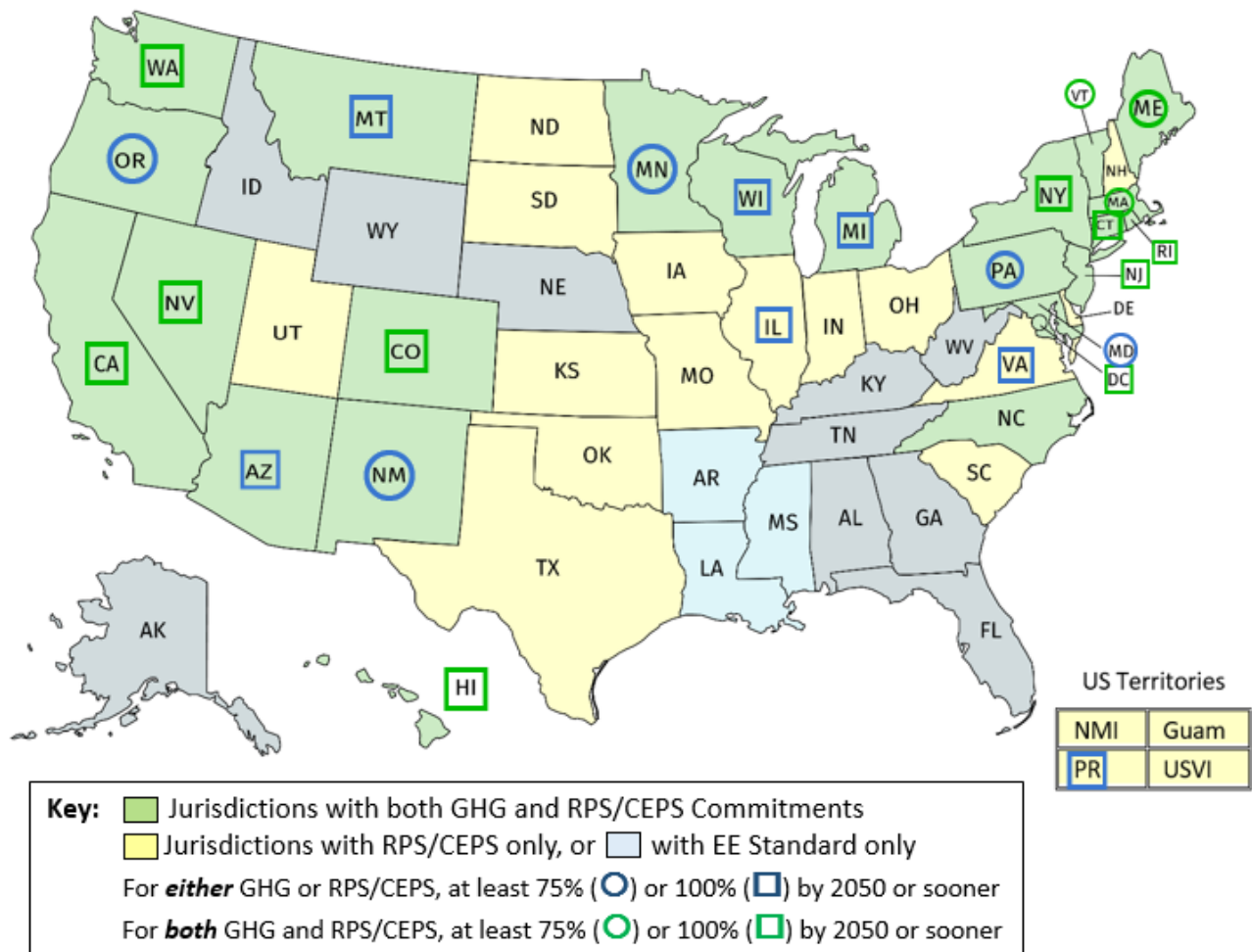
Advanced metering, or the use of modern electric meters that enable two-way data sharing between utilities and customers, has been key to enabling the changing role of customers. Over the last decade, the number of advanced meters deployed in the U.S. sys-

tem has increased significantly (Figure 5). This increase will facilitate the adoption of new load control strategies that more fully integrate the operation of buildings into the electric system. These new, innovative processes are enabled by regulatory rules that cover issues such as who can provide service, how service is compensated, and cyber protection and customer privacy.

Electrification

In the United States, there has been a growing recog-

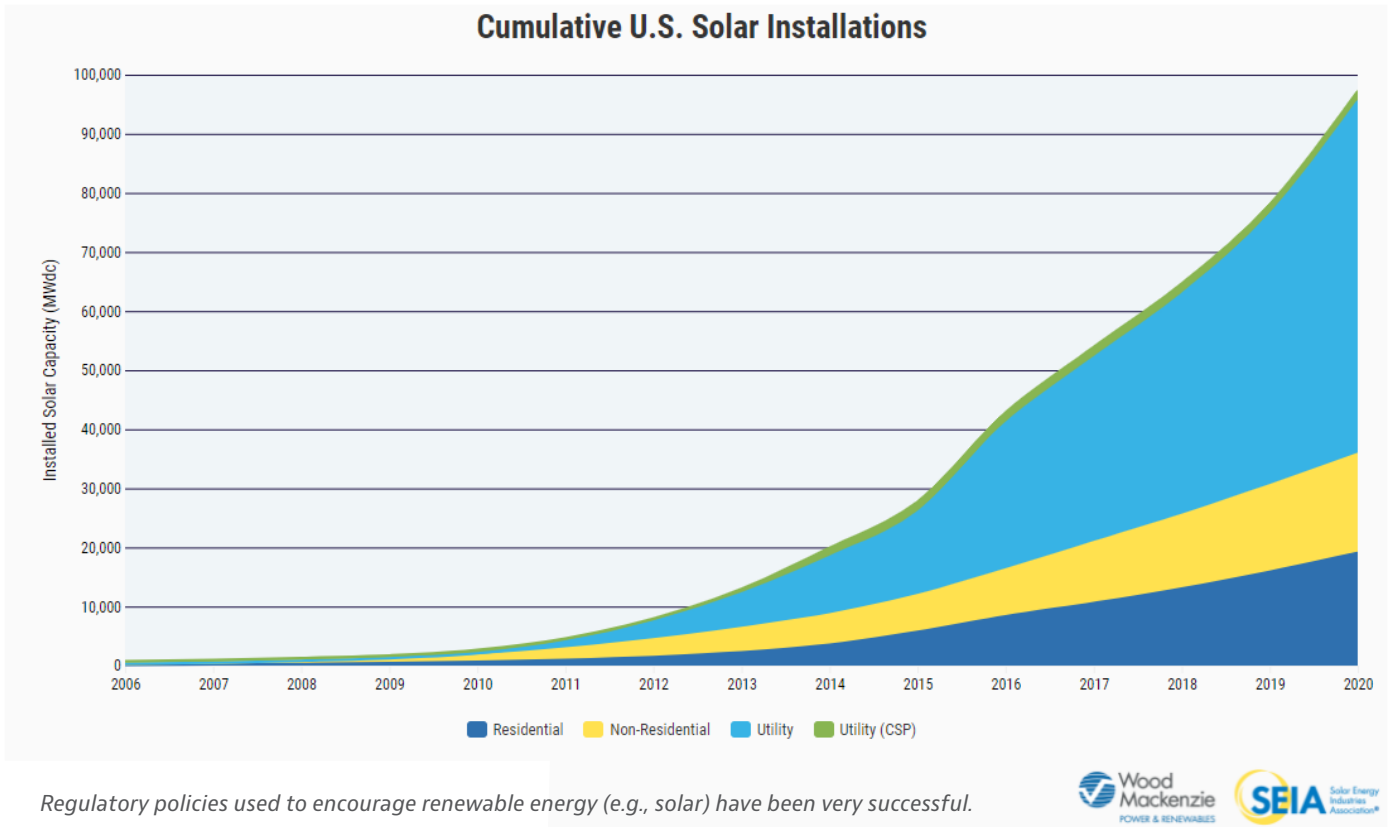
Figure 3. State Decarbonization and Renewable Energy Policies



The states are playing a significant role in encouraging clean and renewable production. Figure 3 provides an overview of formally adopted state activities.

(Source NRRRI Clean Energy Policy Tracker, including state-by-state details, <https://www.naruc.org/nrri/nrri-activities/clean-energy-tracker/>.)

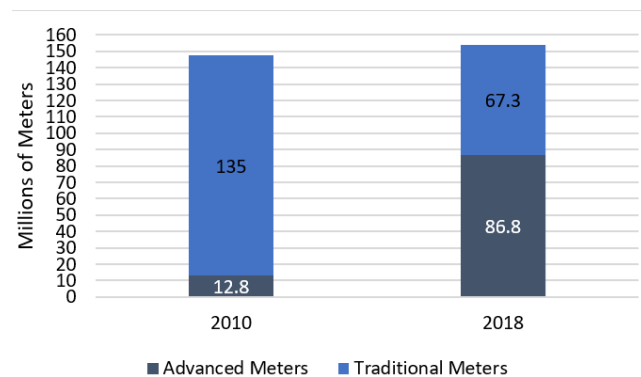
Figure 4. The Growth in Solar Installations



...nition among the regulatory community that meeting decarbonization goals means a rethinking of all fuel uses. Given the trend to decarbonized electric generation, the current approach is to substitute electricity for other fuels that have a higher level of greenhouse gas emissions. All sectors expect to increase their electricity consumption as they decarbonize by shifting from fossil fuels to electricity. Nowhere is this shift as significant as it is in the transportation sector, which is in the midst of a fundamental paradigm shift from fossil fuels to electricity.

Increased electrification raises a number of important regulatory issues that involve defining the role of regulation in creating new business models for utilities and non-utility providers. These questions include: What is the role of the utility (and the non-utility) in providing service? What mechanisms are used for compensating them? The answer to these questions will be determined largely by state PUCs.

Figure 5. The Adoption of Advanced Meters in the U.S.



(Source: FERC "2020 Assessment of Demand Response and Advanced Metering" December 2020, Table 2-1: Estimates of Advanced Meter Penetration Rates.)

Figure 6. The Impact of Electrification on Load Growth

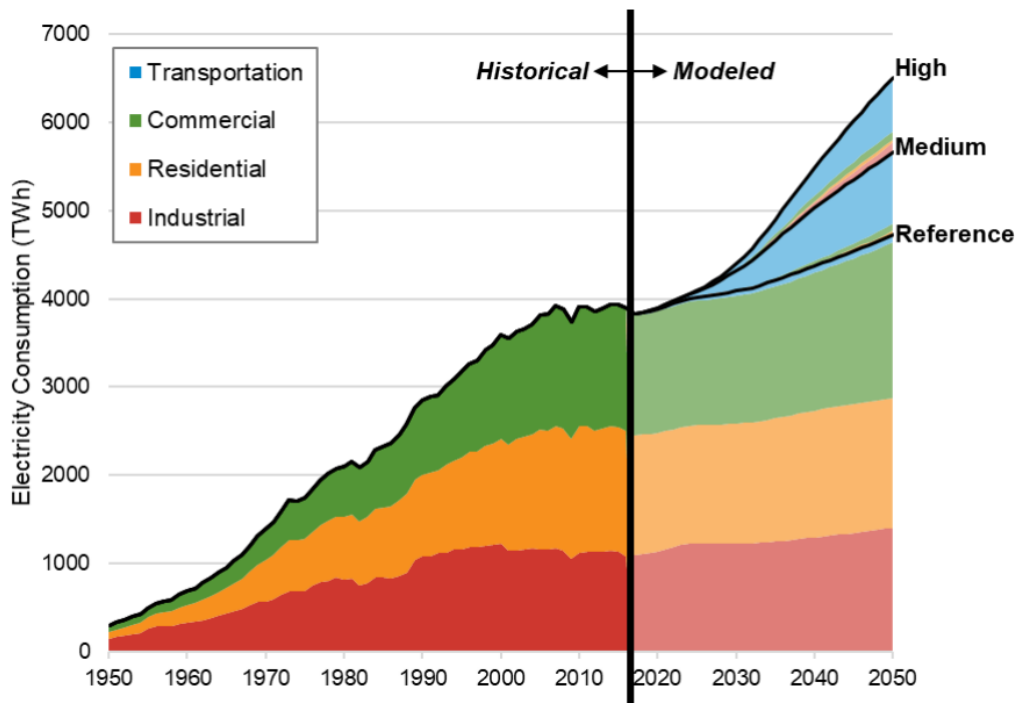


Figure ES-3. Historical and projected annual electricity consumption

Moderate technology advancements are shown. Slight adjustments were made to the modeled industry consumption estimates (for 2017–2020) to align them with available historical data.

(Source: NREL, Electrification Futures Study: Scenarios of Electric Technology Adoption and Power Consumption for the United States, p. xiv, <https://www.energy.gov/eere/analysis/downloads/electrification-future-study-scenarios-electric-technology-adoption-and>)

Implications for Regulation

U.S. state and federal regulation will continue to become more complex as we move closer to meeting environmental goals. It will become increasingly important for regulators and legislatures to determine the market and regulatory mechanisms for cost recovery of renewable generation, as well as for emerging zero carbon fossil fuels that use carbon sequestration and capture. In the new world, non-utility providers will likely play a significant role. The definition of their role by regulators and legislatures will matter. Will they be the primary developer, with the utility acting as a counter-party to purchase power agreements, or will there be an independent third entity that enters into the contracts or creates short-term markets? It will be important to create the right incentives for the utilities and the market, which will shift the focus of regulation from

cost of service to performance-based regulation.

Planning will take on a larger role in the decarbonized world. The U.S. distribution system will need to move from a delivery-only system to a service platform. Resource adequacy, another long-lived paradigm of electric regulation, will also need to be re-evaluated. Finally, the wholesale bulk system electric markets will need to be synchronized with the local distribution markets.

In the United States, the imperative to decarbonize is clear, but the path is not. What is clear, however, is that the role of regulation in implementing decarbonization will grow in importance. States are evaluating new pricing paradigms for compensating customers for production from distributed energy systems, there are emerging issues of stranded cost recovery, and there are a host of issues associated with who will own electric vehicle charging stations and how they will be interconnected to the grid.

The Growing Role of Regulatory Cooperation in the Mediterranean Energy Transition



Written by Daphné Lacroix, MEDREG Secretariat

Photo: Ofer Blank/Courtesy of MEDREG

In the Mediterranean region, the past decade has been marked by the discovery of new gas fields off the Eastern coasts and the emergence of competitive renewable energy sources—all within a context of growing demand for energy and rising concerns about the environmental impacts of energy use. These developments, together with the region's common objective of establishing an integrated energy market, have significantly influenced regulations governing the electricity and gas markets in the Mediterranean countries.

We have seen significant progress toward the creation of an integrated energy market in many aspects.

From the increasing role of regulation in member countries to increased cooperation in project development and knowledge-sharing, MEDREG gets closer to the goal of an integrated energy market. Our region has developed good interconnections, adopted regulatory schemes that promote renewable energy sources and transparent gas markets, and put in place consumer protection policies. A challenge remains for the Mediterranean countries to better take the regional dimension and potential when planning infrastructure investment, but as we explore below, the region is well-positioned to meet future goals in the next decade.

New regulators have emerged in Morocco with the creation of the Moroccan Electricity Regulatory Authority and in Egypt with the creation of the gas regulatory authority GASREG. In Jordan, the Energy and Minerals Regulatory Commission extended its authority to the gas sector, while Lebanon is making encouraging progress toward establishing an independent electricity regulator, with the support of MEDREG.

The Mediterranean region also witnessed progress in market opening and monitoring, as well as the emergence of new ideas on how to stimulate investments. The majority of MEDREG members have already opened their electricity markets and the liberalization of the gas market is following, though at a slower pace. Transparency and accountability

also increased throughout the region with most Mediterranean regulators consulting stakeholders on draft regulations before making any final decisions.

Infrastructure

In terms of infrastructure development, the situation is different between the Mediterranean's two shores. Whereas the European Union countries aim to integrate their markets and allow the large-scale integration of renewable energy sources, the southern and eastern Mediterranean countries must address the increasing energy demand, and supply security remains a dominant concern and prominent objective of new interconnectors.

The fact that intra-regional interconnections are not properly exploited led regulators to rethink the strategy of investment plans. They shall start with the identification of needs, considering the potential and complementary characteristics of the North-South integration and sub-regional trade, aiming for efficient and coordinated development at a regional level. Even though cross-border interconnections are advanced in several Southern shore countries, the exchange of electricity is highly limited and has been used for mutual aid and annual trade contracts with the European Union.

Interconnections are well-developed in the Maghreb block of Algeria, Morocco, and Tunisia.



Photo: Tom Carpenter / Shutterstock.com

Increasing Regulatory Independence, Responsibility, and Transparency

First and foremost, the Association of Mediterranean Energy Regulators (MEDREG) observed a strengthening of Mediterranean energy regulators and their roles in the market. Nineteen out of the 22 national regulatory authorities in the region are now distinct and functionally independent from other public and private entities. Political and legal independence is one of the most important regulatory principles for a functioning energy market.

Currently, however, electricity exchanges in the Maghreb block are limited to mutual aid and annual trade contracts with the European Union. In the Mashreq, eight countries including Egypt, Iraq, Jordan, Lebanon, Libya, Palestine, Syria, and Turkey are part of an interconnection project to upgrade their electricity systems to a regional standard. Egypt, Iraq, Jordan, Syria, and Turkey are also linked with a trading agreement for mutual assistance through the exchange of surplus power. The program would yield great economical and technical benefits for interconnected countries by reducing investments in constructing new power stations and exchanging energy among the networks, thereby improving their economics and informational exchange in power system planning and operation.

Consumer Protection

The protection of energy consumers has also improved significantly across Mediterranean countries. Consumer protection policies are in place in all Mediterranean countries and the role of the consumers in the market is an increasing regulatory interest. For instance, many regulators are responsible for reviewing complaints and resolving disputes, and almost all countries have adopted protection measures addressing the needs of vulnerable consumers.

More specifically, in Jordan, regulators are seeking to improve the quality of consumer services, taking inspiration from the best practices applied in Egypt, France, Italy, and Malta on connection to the grid, billing and metering, and complaint handling. Consumer protection and empowerment will remain two of the main priorities for the decade to come.

Decarbonization

In addition, as governments of the Mediterranean countries adopt policies aimed at tackling climate



Photo: Ofer Blank/Courtesy of MEDREG

change, this past decade witnessed a shift in the way by MEDREG members design and apply regulation: The decarbonization of the energy sector has become essential. Mediterranean energy regulators have embraced the energy transition and are adapting their regulation to serve the transformation of the global energy sector from one that is fossil-based to one that is zero-carbon by the second half of this century.

For example, auction mechanisms have become the new standard for determining funding levels for renewable energy sources. Smart grids have developed widely in the Mediterranean countries, with regulators applying smart meters policies in Montenegro and Greece, demand-side management mechanisms in Egypt and Spain, self-generation policies in Cyprus and Egypt, storage systems in Jordan and Portugal, and the introduction of electrical vehicle infrastructure in Italy and Turkey.

With the production of dedicated reports, MEDREG is promoting, sharing, and encouraging regulatory practices that facilitate the integration of renewable energy sources and that foster the

green energy transition in the electricity and gas markets.

The increasing importance of gas, with recent discoveries of new sources and routes, particularly in the Eastern Mediterranean, has also influenced and shaped regulation in the region. For instance, the last years have seen the creation of a gas regulator in Egypt, GASREG, whereas Jordan is seeking to design and implement regulation for its gas sector.

Regulatory Cooperation

Unlike most regional associations of energy regulators, MEDREG gathers a heterogeneous group of regulators comprising the EU, the Balkans, and the MENA region of Middle Eastern and North African

countries. Whereas this can sometimes bring challenges to align the regulation of our members, the heterogeneous mix of countries more often acts as a fertile ground to experiences and knowledge-sharing.

Over the past 10 years, MEDREG observed reinforced productive relationships for regional problem-solving and exchange of innovative technical knowledge, which serve efficient and sustainable energy markets in the region. This expanded cooperation between members and energy stakeholders took place at several levels:

At an operational level, cooperation took place between the technical staff of national regulators who supported each other and collaborated on a variety of topics through peer reviews, personalized study visits, specific workshops, and ad-hoc reports. At a top level, cooperation took place with a 2019 presidents' meeting emphasizing commitment to cooperation, especially on renewable energy deployment and gas market development. This presidents' meeting, in Rome, was the first of what is meant to become an annual gathering to inform the association's strategy at the highest level.

And finally, cooperation took place with external partners and regional associations to embed the regulatory perspective in the development of Mediterranean energy relations. To name a few, MEDREG collaborated with the Union for the Mediterranean, the European Commission, Mediterranean Transmission System Operators, and with fellow regional associations of the European Union (Council of European Energy Regulators) and South East Europe and the Black Sea Regions (Energy Community Regulatory Board) more significantly in the recent years.

Technical Knowledge-Sharing

Another notable change that marked the past decade in the energy regulatory sphere in the Mediterranean region is the way in which MEDREG member cooperation and technical assistance is approached: it became more personalized, inclusive, effective, and adapted to the national circumstances, responding to the members' national needs and priorities.

Requests for support from MEDREG members, notably those of the Southern shore, have increased significantly and become more diversified, including requests for the creation of an independent regulator with clear powers and competences or requests for support in improving legal and regulatory frameworks in member countries. For several years, energy regulators from the Southern and Eastern shores

have benefitted from numerous tailor-made workshops, reports, and other study visits to support national reforms underway, or expected, in their country.

MEDREG multiplied its participation in public events and significantly increased awareness for advocating for the role of regulation to a growing audience. By way of example, two important events held in Brussels in 2019 shed light on the growing recognition of the regulation's role in the Mediterranean energy policy arena: MEDREG's Annual Forum and a media event presenting the regulatory achievements of our members.

Learning from the Pandemic and Moving into the Future

Finally, despite the COVID-19 pandemic of 2020, MEDREG's members were able to learn from this challenging period and managed to endure the rough times. The objective of MEDREG lies in the cooperation between all of the energy stakeholders to achieve integration in the Mediterranean region. Although cooperation could not be done in person, our network adapted to the digital transformation of all our services and channels, achieving a wider reach. Indeed, MEDREG managed to transfer our technical and training key activities online and ensure that our members continued to be fully involved, even reaching additional regulatory staff with our initiatives. In this way, MEDREG led online events, trainings, and meetings on its own and with other relevant entities in the region.

The timespan of 2010 through 2020 saw a greater acknowledgment of the importance of regulation in the Mediterranean region and its essential role in attracting investment and ensuring the efficient use of the energy system and accompanying green energy transition. We moved from assessing the existing condition of Mediterranean markets to proposing concrete solutions to our Southern partners that can allow them to better exchange among themselves and with European regulators. Now, MEDREG's next objective is to start supervising concrete projects that will allow us to implement what we have studied over the years as well as to upscale our capacity-building activities to keep MEDREG regulators updated, efficient, and connected.

Completion of the EU Internal Electricity Market: A Moving Target?

Written by Petra Kistner & Paul Giesbertz

Petra Kistner works for White & Case LLP and Paul Giesbertz for Energie Nederland. The views as expressed by the authors do not necessarily reflect the views of White & Case LLP and Energie Nederland.

The European Union aims to establish a functioning internal electricity market, in particular, by promoting EU-wide interconnection of the energy networks. Facilitating cross-border trade will be key to achieving an internal electricity market. It allows the market integration of more volatile electricity production from renewable energies, which is also a major goal of European energy policies.

In 2010, Günther Oettinger was appointed vice president of the EU Commission and became responsible for energy policy for the EU.

He quickly declared his intention of completing the EU-wide energy market by implementing harmonised network operation rules in a 2011 speech, stating, “We must complete the internal energy market by 2014 at the latest, by developing and putting in place all EU-wide network codes and removing all technical barriers to allow gas and electricity to flow freely within the EU.”¹ He set a goal of developing the network operation rules by 2014.

More than 10 years later, after the adoption of the so-called Clean Energy Package by the European legislature as the fourth legislative package in the energy sector and with the so-called Decarbonisation Package on the horizon, the question of how to fully complete the EU internal electricity market remains.

From the First Liberalisation Directive to the Clean Energy Package

The journey to build the EU internal electricity market started in 1996, with the First Liberalisation Directive, which introduced unbundling of accounts and negotiated third-party access. It continued in 2003 with a second package of legislation, which introduced legal unbundling and regulated third-party access but also declared that all consumers, including domestic consumers, were free to choose their own energy suppliers.

The third legislative package of 2009 then aimed to harmonize the EU internal electricity market. European entities were created to ensure cooperation of European Transmission System Operators (ENTSO-E) and for the cooperation of the European National Regulatory Authorities (ACER). ENTSO-E received the important mandate of drafting network development plans and the EU Network Codes to implement the internal energy market.

The EU Network Codes are supposed to include detailed rules—particularly, related to cross-border electricity trade—for the purpose of harmonizing the operation of transport networks all across Europe. From there, the fourth legislative package, the so-called Clean Energy Package, was presented in 2016 and adopted in 2018-2019 and introduced a large number of new rules in the network sector. Some of these rules overlap and some supplement the previous legal framework for cross-border electricity trade.

1 Speech at the opening ceremony of the Agency for the Cooperation of Energy Regulators, March 3, 2011.

EU Network Codes

A key element of the European Union internal electricity market is cross-border electricity trade, and a key legal instrument to regulate the cross-border electricity trade are the EU Network Codes.

The first EU Network Codes were based on the Electricity Regulation of 2009 (Regulation EC 714/2009)², which was introduced as part of the third legislative package. The EU Network Codes are adopted by the European Commission as a European regulation, and the codes can thus be regarded as implementing acts of the Electricity Regulation of 2009 by the European Commission. This is a somewhat special process under European law, as it is usually the responsibility of the Member States to transpose and/or to apply European regulations and directives (also referred to as “European Secondary Law”³) into national law. For this reason, the EU Network Codes are also referred to as European “Tertiary” Law to indicate that the EU Network Codes rank below the European regulations and directives in the European norm hierarchy.

But there is more: The EU Network Codes oblige Europe’s Transmission System Operators to jointly develop different methodologies to facilitate cross-border trade among the member states of the European Union. The EU Network Codes themselves do not actually contain the detailed and necessary rules to harmonise and implement the EU internal electricity market but need further legal steps to be implemented in the form of the methodologies. Regional methodologies include the methodology for re-dispatching and countertrading, cost sharing, and the methodology for cross-zonal capacity calculations, for example.

In general, the Transmission System Operators submit their proposals for the methodologies for approval by National Regulatory Authorities. In the event that the National Regulatory Authorities are not able to reach an agreement, they refer the relevant proposal to ACER, which then has to decide upon the proposal and approve the relevant methodology.

Parties can appeal ACER’s decisions in front of the ACER Board of Appeal, an independent decision body established at ACER composed of regulatory

experts. After an appeal against one of ACER’s decisions is filed, the Board of Appeal has four months to decide on the appeal. Decisions of the Board of Appeal can then also be appealed before the European Courts.

ACER’s importance will increase in the future, and the appeal procedure before the ACER Board of Appeal will also be used considerably more often than before.

In fact, the ACER Board of Appeal is already facing an increasing number of appeals: From 2015 to 2018 there were only eight appeals in total. But 2019 had six appeals; 2020 had nine appeals; and in the first quarter of 2021, there have already been 10 appeals! So far, the Board of Appeal has rejected all but one appeal.

It is also remarkable to note that most appeals were filed by either transmission system operators who drafted the methodologies and/or the national regulatory authorities. Very few appeals were filed by market participants: last year, one appeal by the Dutch energy association was considered inadmissible, as this association was not addressed directly by the decision nor affected directly.

As a consequence, legal proceedings at the European level and before the European courts will be the new normal for the transmission network operators and the national regulatory authorities in the future.

Cross-zonal Capacity Calculations

At the core of cross-border electricity trade, which is governed by the EU Network Codes and a respective methodology, is the calculation of capacity available for cross-border trade. A cornerstone for a true EU electricity market is the ability to maximize the possibilities for electricity exchanges between the EU member states. However, transmission system operators have constantly been criticised for allegedly unduly restricting cross-border trade.

Industrial consumers in higher price zones want to import more, and producers in low price areas want to export more. Transmission system operators are accused of shifting bottlenecks to the border to avoid internal or intrastate congestions by restricting the capacity available for cross-border trade. Market par-

² The Electricity Regulation of 2009 (Regulation EC 714/2009) was repealed by Regulation EU 2019/943, which also contains a similar legal basis for the establishment of EU Network Codes.

³ The European Treaties (Treaty on European Union and the Treaty on the Functioning of the European Union) are referred to as European Primary Law.

ticipants assumed transmission system operators restrict capacity to reduce the need to take costly measures like redispatch or network expansion to resolve internal congestions.

At the same time, the transmission system operators face a fundamental problem: The available capacity for cross-border trade not only depends on the availability and configuration of the grid, it also depends on the amount and—especially for the highly meshed grids in continental Europe—on the location of electricity generation. Thus, transmission system operators and market parties faced uncertainties in capacity available for cross-border trade. This is a challenge to be tackled and solved by the EU Network Codes by way of capacity calculation.

The EU Network Code for capacity allocation and congestion management⁴ provides a general framework for the capacity calculation process, but it does not precisely govern the details of that process. Instead, this Network Code requires that transmission system operators first make a proposal for different capacity calculation regions, and—after approval of this proposal by the regulators—propose capacity calculation methodologies for each region.

Twelve capacity calculation regions were first established by ACER in 2016, with the largest called the “Core Region.” The Core Region contains the borders between 13 member states from France to Romania. The competent National Regulatory Authorities of this region could not come to a common decision and, finally, ACER decided on the capacity calculation methodology for the Core Region in February 2019. This methodology has not yet been fully implemented and, moreover, there are still two pending appeals from Germany against ACER’s decision at the European Court of Justice. Germany questions how specifics of the internal networks such as congestions and loop flows are handled in the Core Region capacity calculation methodology.

Two other closely related methodologies for the Core region were decided by ACER at the end of 2020 when the National Regulatory Authorities were not able to reach an agreement on how these methodologies should look. But at the beginning of 2021, several appeals from different Core Region Transmission System Operators and national regulatory authorities were filed with ACER’s Board of Appeal, in particular against a methodology for re-dispatching and countertrading cost sharing.

Moving Forward

In 2011, Günther Oettinger’s goal was to have a set of EU Network Codes with harmonised rules in place by 2014 to complete the EU internal electricity market. The EU Network Code most relevant to enable cross-border electricity trade, was adopted in 2015 creating a delay of just one year. But the regulation did not contain the precise rules needed to implement a fully completed EU internal electricity market. Instead, the regulation relied on several subsequent methodologies to be implemented.

Then the EU adopted its Clean Energy Package, before fully implementing the Third Electricity Package with all its EU Network Codes and methodologies.

Even still, in 2021, important methodologies are not yet fully implemented and are instead subject to appeals in court procedures. In the meantime, the complexity of regulations has increased significantly for the transmission system operators, the National Regulatory Authorities, and also the market participants who only take passenger seats behind the network operators and the regulators—though they are the ones who should profit from the implementation of the EU internal electricity market.

It may be worth asking: Is this situation hindering the implementation of the EU internal electricity market?

In practice, transmission system operators facilitate cross-border electricity trade every day, and the actual completion of the EU internal electricity market is progressing. The gradual rollout of day-ahead and intraday market coupling is a good example.

But progress is slow, and the regulations are extremely complex. There are ample opportunities for market participants to provide input through consultations, but the complexity has become an obstacle. Methodologies are complex, mutually interrelated, and not yet harmonized across regions. European legislators also seem to have realized that the complex set-up of new electricity regulation, EU Network Codes, and methodologies need some consolidation and simplification to reach the goal of an EU internal electricity market.

A revision of the EU Network Code for capacity allocation and congestion management was initiated in 2021. It will be interesting to see which road the European legislators will take when passing the Decarbonisation Package and in the gas sector.

Still, the aim of Oettinger to complete the internal market by 2014 was not reached, and the finish line is still not in sight.

4 Commission Regulation (EU) 2015/1222, “CACM”

The Growth of Renewable Energy in India over the Decade

Written by Ravindra Kadam and Rashmi Saurav

The views expressed in this article are those of the authors and do not represent the views of the Central Electricity Regulatory Commission, India.



Renewable energy resources play a very critical role—not only in enabling India to reach its climate commitment, but also in meeting the nation’s rapidly increasing energy demand. As a developing country, India is at the crossroads of an energy transition and achieving developmental goals for its population. To be a part of the solution to combat climate change, India’s Intended Nationally Determined Contribution (INDC) for 2021-2030, includes among other things: (i) reduction of the emissions intensity of its GDP by 33-35 percent by 2030 from 2005 levels and (ii) achievement of about 40 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. In light of the current debates on environmental sustainability and the role of the power sector, India has set itself an ambitious target of installing 175 gigawatts of renewable energy capacity by the year 2022 and 450 gigawatts of renewable energy capacity by 2030.

The huge potential of wind and solar resources available in the country, coupled with a conducive policy and regulatory framework, has increased renewable capacity from a mere 32 megawatts in 1990 to 92.97 gigawatts, excluding hydro generation (46.21 GW), by February 2021. Upcoming renewable projects show that this trend is likely to continue in the coming years.

Historical development of Renewable Energy in India

Over the last decade, the renewable energy scenario has changed significantly in the nation. Recognizing the potential of renewables, the government of India has formulated various promotional policies and incentive schemes, with a significant contribution from the the policy and regulatory front.

The enactment of the 2003 Electricity Act is one such significant policy intervention, wherein specific legal provisions were provided for the promotion of generation from renewable resources. Section 86 (1) (e) of the Act, which enumerates the functions of India’s State Electricity Regulatory Commissions (SERCs), details the SERCs’ responsibility to: “promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee.” This provision gave the re-

Figure 1: Renewable Installed Capacity in India (as of February 28, 2021)

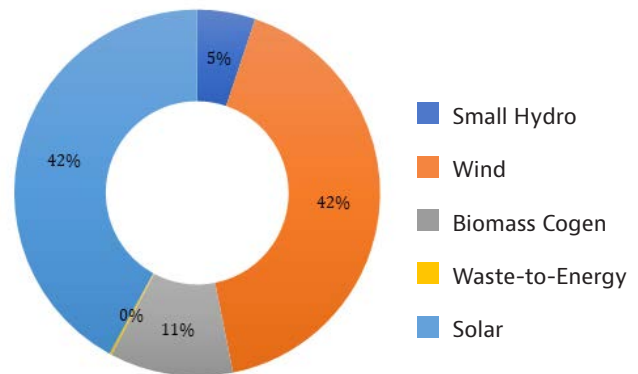
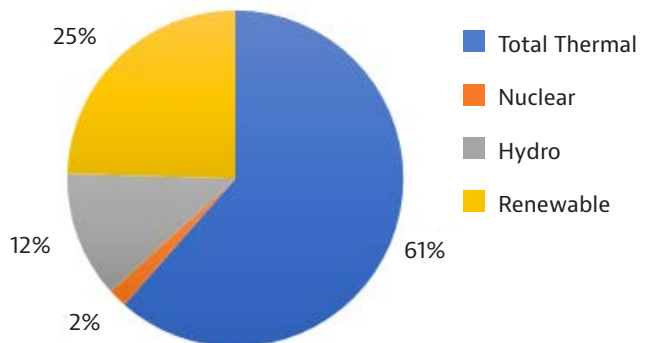


Figure 2: All India Installed Capacity (as of February 28, 2021)



quired push for mandatory procurement of renewables by obligated entities, including distribution utilities, open-access consumers, and consumers owning captive power plants

The concept of Renewable Purchase Obligation (RPO) has been introduced in the Indian power sector, which mandates India’s obligated entities (distribution utilities, open access consumers, and consumers owning captive power plants) to ensure that a predetermined portion of their power purchase is sourced from renewables. These obligations are calculated by states and are legally binding on the obligated entities. RPO follows an increasing trajectory, translating to increased procurement of power from renewables over subsequent years. Thus, a conducive legal, statutory, and regulatory framework developed at the Central as well as State levels has led to a significant increase in renewable energy capacity in the country.

Given the Central-level framework, many SERCs have framed state-level policies and regulations to promote renewable energy in their states. However, policy formulation at the state level differs on many grounds. Some SERCs have taken proactive measures, such as technology-specific targets for renewable energy installation, concessional transmission charges, banking of energy, and others, to tap renewable energy sources, which has resulted in a significant increase in renewable capacity. Furthermore, renewable energy has also been favoured through other policy measures such as accelerated depreciation benefits for renewable projects, renewable generation-based incentives, tax concessions for renewable projects, and more. Measures such as preferential treatment to renewable energy projects with higher returns on equity, according must-run status, specifying levelized tariffs, and others have provided the required financial and revenue certainty in the initial phases of renewable development in India.

This high growth of renewable power has been primarily concentrated in seven states in India—namely, Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Rajasthan, Gujarat, and Maharashtra. Approximately 70 percent of India’s total targeted renewable capacity additions by 2022 are expected to emerge in these states.

The Renewable Energy Certificate (REC) framework was also introduced a decade ago in India to address the twin challenges of transferability of in-firm renewable power within the country and to assist the obligated entities to meet their RPO. The REC mechanism, akin to a cap-and-trade mechanism, helped the entities meet their RPO through the trading of certificates, in case they were unable to purchase green power. The REC mechanism has been a flag bearer for promoting RPO compliance. Obligated entities have been purchasing RECs and earning them in case they procure more renewable power than the RPO threshold.

Another policy measure considered to advance renewable installation was the promotion of competitive bidding for such projects. Consequently, renewable tariffs have not only achieved grid parity over the years but have also surpassed conventional generation resources in terms of low tariffs. In November 2020, solar tariffs through bidding achieved a record low of Rs. 2.00/kWh.

Renewable Integration: Challenges and Development

The rapid integration of renewable energy into India’s grid brings along with it numerous challenges. Ad-

Figure 3: Cumulative Renewable Installed capacity in India over years

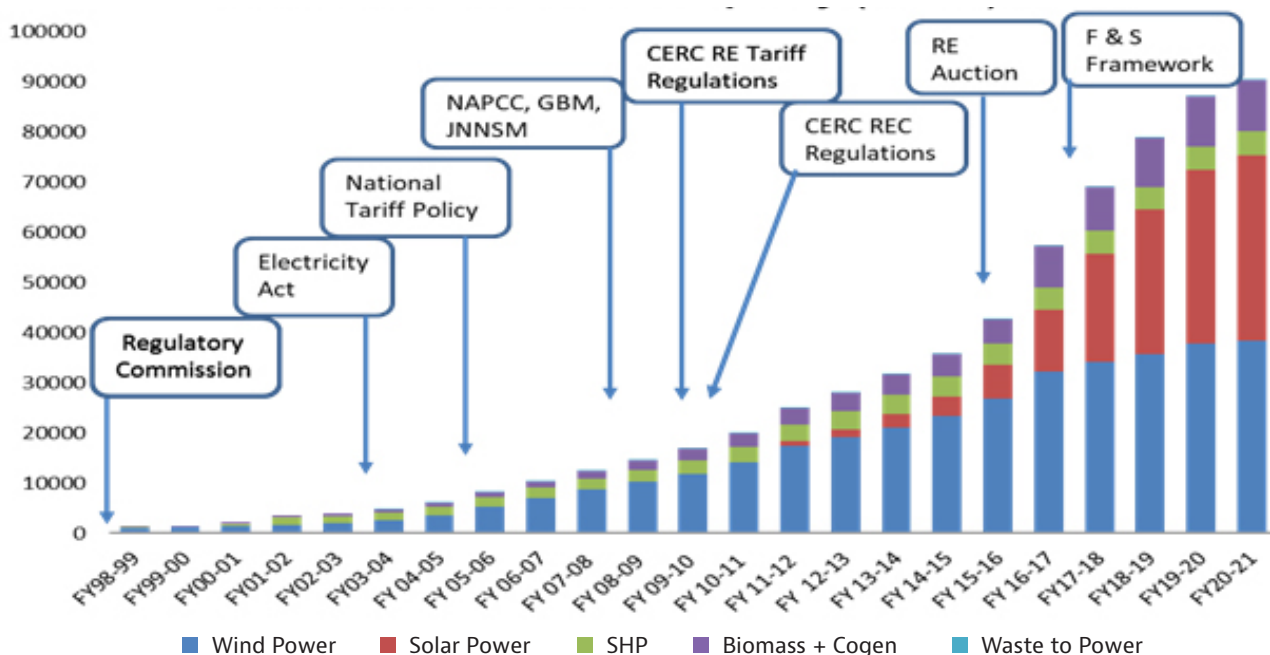




Photo: Ikhwan Ameer / Shutterstock.com

In India, thermal generating stations have been allowed to back down to a minimum operating level, known as “technical minimum,” of 55 percent (that is, a plant load factor of 55 percent) from the earlier minimum operational level of 70 percent. This ensured more room for renewable generation to be absorbed into the grid and the use of the thermal fleet for balancing purposes during the evening peak demand in the system.

Figure 4: Trends in Solar PV Tariff



Addressing these challenges is key to supporting a system with heavy renewable penetration. The foremost concern is the inherent intermittency and variability of renewable resources. To combat this, flexibility needs to be incorporated into the system. Flexible operation of existing resources, primarily thermal generators, needs to be encouraged and implemented to allay the variability that renewable energy brings to the grid. Because physical grid security is also a consideration, several regulatory initiatives were taken by the Central and the State Electricity Regulatory Commissions to address such issues.

The existing thermal fleet, which is also the largest contributor meeting India’s electricity demand, is needed to manage the variability in a power system heavy on renewables. As a first step, the technical minimum level for the operation of thermal power plants has been reduced from 70 percent to 55 percent, mainly for providing flexibility to respond to the needs of variation in demand and renewable generation, thus allowing for more renewable generation to be absorbed in the system. Considering India’s need for an increased flexible system, the

ramping capability of thermal generating stations has been incentivized for central generating stations by the Central Commission.

India also introduced Real Time Market (RTM) beginning in June 2020 to address the need for an organized market platform that enabled buyers and sellers to meet their energy requirements closer to real-time operation. Subsequently, a Green Term Ahead Market (GTAM) was also introduced in one of the Power Exchanges in India, which deals exclusively with green power. GTAM is thus helping obligated entities to meet their RPO compliance.

Way Forward

Going forward, as India promotes increased renewable penetration, mechanisms for alleviating the is-

sues that accompany renewables also need to be considered and implemented to ensure an efficient power system with a stable and reliable grid. Flexibility in the system will be key. With a flexible system, India can not only integrate more renewables but also can operate its grid reliably and economically.

Ancillary Services Regulations

CERC had issued ancillary services operations regulations in 2015 to provide the required ancillary services (balancing services) at an inter-state level. Under this framework, the available capacity unutilized in the grid is dispatched to manage an imbalance in the grid. Based on the experience gained on implementation of this administered framework of ancillary services, CERC is planning on moving toward a market-based mechanism for ancillary services for market-based optimisation of cost and resources.

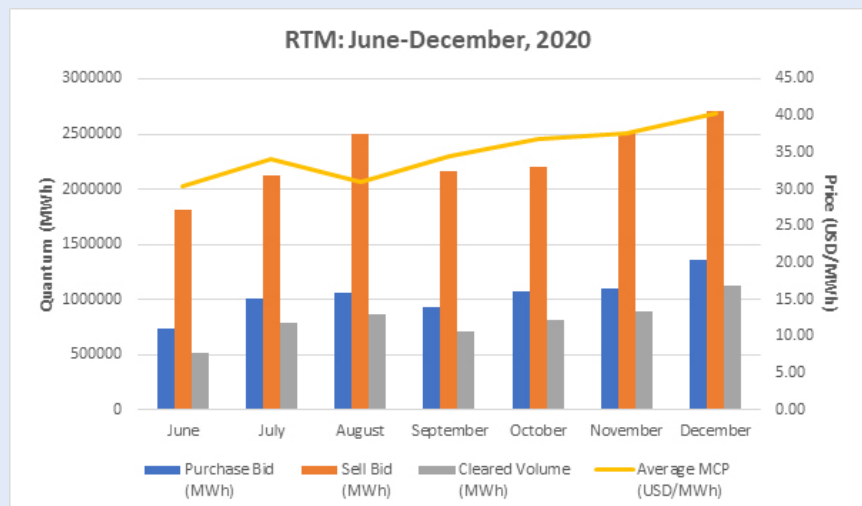
A flexible and reliable system capable of absorbing more renewable resources provides additional avenues for renewable integration through the market. This will cater to future demand, rather than remain solely a means for RPO compliance. Hence, a regulatory framework on resource adequacy should also be evolved for smooth, effective, and economical renewable integration.

Discussions are already underway for revamping the Ancillary Services Regulations in India to enhance grid reliability and security. Furthermore, procurement of renewable energy through the market is also being encouraged by the policy-makers in India. GTAM and REC mechanisms have already been implemented, and going forward, India requires both technical and commercial solutions for renewable energy. Whereas grid flexibility and reliability may address the former, introduction of further avenues for sale of renewable energy will likely take care of the latter. With numerous ideas and concepts being investigated today, India is set to achieve its aggressive renewable energy targets.

India's Real-Time Market for Electricity (RTM)

Last year, India's Central Electricity Regulatory Commission (CERC) introduced the framework for Real Time Market for Electricity (RTM), effective June 1, 2020. RTM is a half-hourly market based on a double-sided closed auction with a uniform market clearing price mechanism for price discovery, similar to the day-ahead market operated previously. RTM offers 15-minute time blocks for each bidding window and the clearing window for 30-minute delivery. Thus, bidding and clearing takes place 48 times every day.

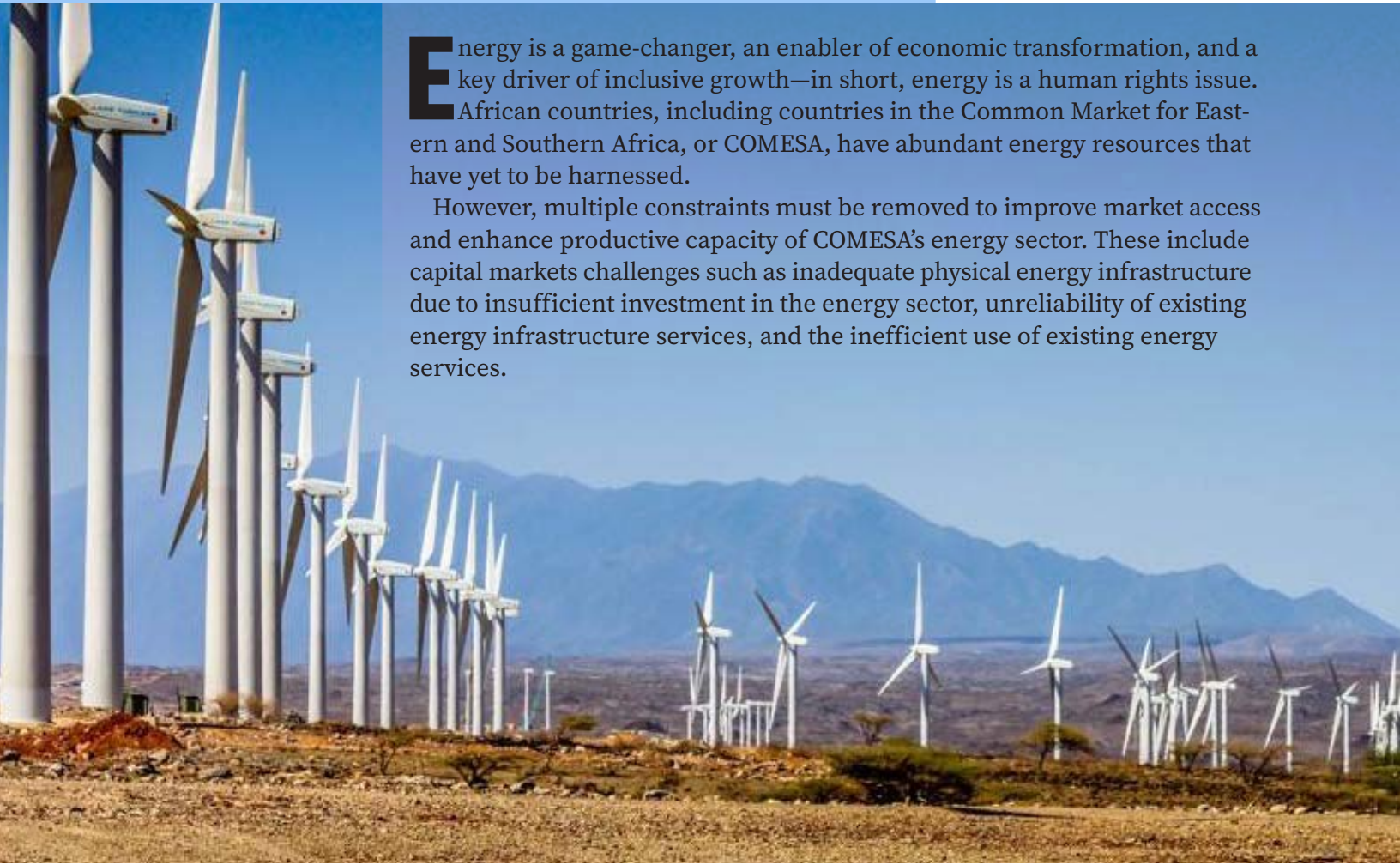
The first six months of RTM implementation showed impressive participation of DISCOMs and generators, with the liquidity in this market indicative that this intervention came at an appropriate time.



Shifting Regulatory Oversight of the Regional Energy Market Propels Investments and Power Trading in Eastern and Southern Africa

Written by Mohamedain E. Seif Elnasr, CEO, RAERESA

Photo: Courtesy of Lake Turkana Wind Power



Energy is a game-changer, an enabler of economic transformation, and a key driver of inclusive growth—in short, energy is a human rights issue. African countries, including countries in the Common Market for Eastern and Southern Africa, or COMESA, have abundant energy resources that have yet to be harnessed.

However, multiple constraints must be removed to improve market access and enhance productive capacity of COMESA's energy sector. These include capital markets challenges such as inadequate physical energy infrastructure due to insufficient investment in the energy sector, unreliability of existing energy infrastructure services, and the inefficient use of existing energy services.

Other challenges include market design, which continues to hamper the development and efficient running of the energy sector. Some of the issues surrounding market design include non-cost reflective tariffs, issues of enhancing regulatory frameworks in order to respond to current issues, and issues of opening up the market to private sector participation in the power.

Deepening energy integration in COMESA states could assist in addressing the energy challenges the region faces. Removing these constraints will be a critical factor in reducing the cost of doing business and in enhancing the competitiveness of COMESA in national, regional, and international markets.

COMESA Installed Capacity

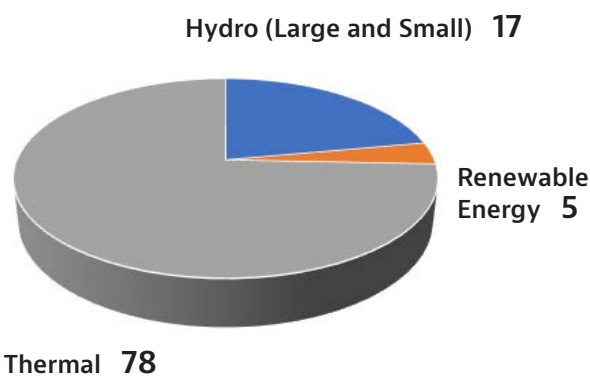
In 2010, the COMESA Secretariat projected that COMESA installed capacity would grow annually by 7 percent from 2010 to 2030. The projection indicated that COMESA installed capacity must double every 10 years to meet the growing electricity demand resulting from economic growth and population growth. This may constitute an opportunity for investors from the COMESA region and beyond who are looking to invest in electricity generation and transmission facilities.

Currently, COMESA has around 96,000 megawatts of installed capacity. The vast majority of this capacity is thermal resources, which make up 78 percent of the mix. Thermal is followed by large and small hydro resources, which make up 17 percent of COMESA's capacity. The share of renewable energy increased from 1 percent to 5 percent, between 2010 and 2020. The increase in renewables is attributed to the policy and regulatory reforms undertaken in COMESA's member states that are now bearing fruit. The most common policy and regulatory reforms include unbundling/restructuring, management contracts, corporatization/commercialization, independent power producers, and electricity law amendments.

COMESA

The Common Market for Eastern and Southern Africa (COMESA) is a regional grouping of 21 African states that have agreed to promote regional integration through trade development and investment. COMESA countries are Burundi, Comoros, Djibouti, Democratic Republic of Congo (DRC), Egypt, Eritrea, Eswatini, Ethiopia, Kenya, Libya, Malawi, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Tunisia, Uganda, Zambia, and Zimbabwe.

Figure 1: Installed Power Generation by Source, 2020



Source: COMESA Secretariat

Table 1: COMESA Installed Capacity Forecast 2010–2030

Detail / Year	UNIT	2010	2015	2020	2030	Overall growth 2010–2030
						Compound annual growth rate (CAGR)
Installed capacity required	Megawatt (MW)	48,730	68,346	95,859	188,569	7

Source: Computed by the COMESA Secretariat in 2010

Creating the COMESA Energy Programme to Promote Regional Cooperation

Increasing energy integration in COMESA states could also assist in addressing the capital market and market design challenges the region currently faces, which include:

- ◆ inadequate level and coverage of physical energy infrastructure due to insufficient investment in the energy sector;
- ◆ inefficiency and unreliability of existing energy infrastructure services;
- ◆ inefficient use of energy services;
- ◆ issues of electricity tariffs; and
- ◆ heavy reliance/unsustainable use of biomass, traditional fuels (wood fuels).

Energy integration in COMESA provides the opportunity to ensure access to affordable, reliable, sustainable, and modern energy (U.N. Sustainable Development Goal 7).

It can enhance the region's energy mix and flexibility. It can facilitate expanded energy infrastructure and technology upgrades to provide clean energy sources, which is a crucial to encouraging growth and helping the environment. Finally, it can help the region harness economies of scale to enhance COMESA's competitiveness in its internal and external markets.

In response to these challenges and opportunities, and in response to the [COMESA Treaty](#) detailing articles of cooperation in energy development,¹ COMESA developed and adopted the COMESA Energy Programme. The main objective of the COMESA Energy Programme is to promote regional cooperation in energy development, trade, and capacity building to address supply-side constraints, to reduce the costs of doing business, and to enhance COMESA's competitiveness in its regional and extra-regional markets. The intention is to harmonize energy policy and regulatory frameworks, facilitate trade in energy services, and develop regional energy infrastructure.

The COMESA Energy Programme, which was instrumental in coordinating research into the development and oversight of a regional energy market, is

facilitated by the COMESA Secretariat, the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA),² and the Eastern Africa Power Pool (EAPP).

A Framework for Regulatory Oversight of the Regional Energy Market

COMESA is working to enhance the regulatory oversight of its regional energy market and take its efforts to harmonize regulatory frameworks to the next level.

At the 41st meeting of the COMESA Council of Ministers, held virtually in November 2020, the council adopted a final report of the study on regulatory oversight of the regional energy market in Eastern Africa, Southern Africa, and the Indian Ocean (EA-SA-IO) region.

The study aimed to develop a framework for regulatory oversight of the regional energy market to be adopted by regional and national regulatory institutions to promote investments and power trading in the region. Authors of the study propose several recommendations in the areas of institutional arrangement, the role of the regional and national regulatory authorities, harmonization of market regulations, development of a common transmission use-of-system charging framework, and environmental considerations.

For its institutional structure recommendation, the study proposes developing separate regulatory oversight of the Eastern Africa-Southern Africa-Indian Ocean (EA-SA-IO) electricity market under which the countries are grouped into three different regulatory regions, each with a separate regulatory authority (the one for island states is a regulatory advisory body of the Indian Ocean region):

COMESA Eastern Africa cluster: Burundi, Democratic Republic of Congo (DRC), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Rwanda, Somalia, Sudan, Tunisia, and Uganda.

COMESA Southern Africa cluster: Eswatini, Malawi, Zambia, and Zimbabwe.

COMESA Island States cluster: Comoros, Madagascar, Mauritius, and Seychelles.

1 COMESA Treaty, Chapter 13, Articles, 106 to 109 on Co-operation of the Development of Energy.

2 Countries of the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA) are Burundi, Egypt, Ethiopia, Kenya, Malawi, Madagascar, Mauritius, Rwanda, Seychelles, Sudan, Uganda, Zambia, and Zimbabwe.

Some COMESA countries may be included in more than one regulatory region.

This structure would build on the existing framework of regulatory organizations in the region by:

- ◆ establishing a new regional regulatory authority for the Southern Africa regulatory region that builds on the knowledge and capacity of the Regional Electricity Regulators Association of Southern Africa (RERA);
- ◆ amending the existing Eastern Africa Power Pool Independent Regulatory Board mandate to establish it as a fully independent regional regulatory authority for the regulatory region of Eastern Africa;
- ◆ establishing the Indian Ocean Club of Regulators as a regulatory advisory body for the island states of the Indian Ocean region; and
- ◆ supporting the newly created institutional framework for regulatory oversight in EA-SA-IO with adequate capacity building through the Centre of Excellence; i.e., through a new African School of Regulation or the already existing framework of organizations with mandates and knowledge on regional regulatory issues, including the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA), the Energy Regulators Association of East Africa (EREA), and the African Forum for Utility Regulators (AFUR).

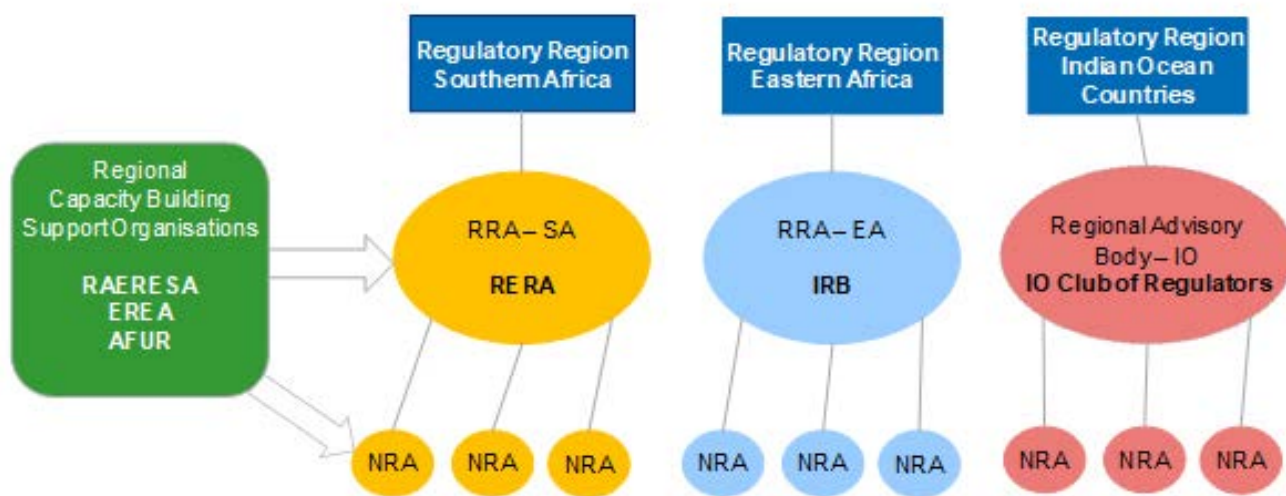
The study recommends harmonizing regulations in several areas to ensure that these regulatory regions operate smoothly. Areas for harmonization include licensing arrangements, market surveillance, transmission contracts and agreements (which will help to incentivize investment in interconnection), technical standards—including the development of a Regional Grid Code—and regional planning regulations to increase regional interconnection capacity.

These harmonized regulations should facilitate creating a level playing field across the Eastern Africa-Southern Africa-Indian Ocean (EA-SA-IO) region, such that investors will be encouraged to pursue new projects against a backdrop of stable and consistent regulatory practices.

In addition to regulatory harmonization, the study suggests the two proposed regional regulatory authorities for Eastern Africa and Southern Africa should work with the relevant stakeholders to develop a standardized methodology for wheeling charges across the region, creating a point-to-point MW-km transmission pricing method to provide a basis for recovering capital, operations, and maintenance costs associated with the use of interconnected network assets and international interconnectors.

The market integration will unlock the huge potential for energy resource sharing, decarbonization of

Figure 2: Recommended regional regulatory institutional structure 2020



Source: Final report on the study on regulatory oversight of the regional energy market in Eastern Africa, Southern Africa, and the Indian Ocean region.

the electricity sector, and greater access to electricity at a lower cost for end consumers. However, success requires a strong platform of regulation both to protect consumers' interests and to create an environment in which new investors will feel confident to participate in the energy market. Success also requires market reform buy-in from regulators, government ministries, utilities, investors, and other stakeholders.

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Timeline for Regulatory Harmonization

Short-term actions

Creating these national regulatory bodies responsible for the energy sector and fully implementing their regulatory mandates, along with setting up regional regulatory authorities for Eastern Africa, Southern Africa, and the Indian Ocean are short-term measures to be completed in the near future. Developing a Regional Grid Code and a reference Grid Code for the Indian Ocean countries is also short term.

Amending the mandate for the Independent Regulatory Board of the Eastern Africa Power Pool to establish a fully independent regional regulatory authority for the region of Eastern Africa is underway.

Medium-term actions

Covering the period from 2024 to 2028, these actions should include the development and implementation of a harmonized approach to transmission charging for international wheeling of power between the Eastern Africa Power Pool and the Southern Africa Power Pool systems as well as the implementation of standardized licenses and agreements to be developed by the Regional Regulatory Authorities during the first phase of their work.

Long-term actions

After 2028, long-term actions will mainly consist of monitoring and developing the regulatory framework by the Regional Regulatory Authorities and the National Regulatory Authorities, building on those short- and medium-term efforts of harmonization.

Peruvian Electricity Reform: Heading Toward Modernization and Energy Transition

Written by Jaime R. Mendoza Gacon, President of the Board of Directors, Osinergmin

Photo: WILLIAM - stock.adobe.com

This year, Peru commemorates 200 years of independence and today, more than ever, it is important to make people aware of the role that energy plays in keeping afloat our economies and providing reliable front-line services.

In this regard and in the spirit of Peru's bicentennial, I would like to take this opportunity to reflect on an important landmark in Peru's energy sector, the Electricity Reform.

The beginning of the Peruvian power system goes back to 1992, with the Electricity Concessions Law, a legal framework that ensures a reliable and efficient electrical system. Later, in 2006 the Efficient Development of Electricity Generation Law was issued to consider the use of auctions by distribution companies for the procurement of energy supply to regulated consumers and transmission planning. During the past 27 years, Peru's power system model has undergone numerous adjustments for the modernization of Peru's power sector.

To boost generation, transmission, distribution, and commercialization of electricity sustainably, Peru launched in June 2019 the Multisector Commission for the Reform of the Electricity Subsector including representatives of Peru's Ministry of Energy and Mines and Osinergmin, the energy regulator. This multisector commission hired a group of international experts to prepare a report considering four pillars 1) strengthening the institutional framework, 2) transformation of the wholesale market, 3) innovation in distribution and retail marketing, and 4) simplification and modernization of transmission networks regulation and their operation and management.

The report offered the following recommendations:

1. Strengthening the Institutional Framework

- ◆ Institutional transformation of the power system operator: Turn Peru's Committee for the System Economic Operation into an Independent System Operator (ISO); consider a new institutional governance; separate the system coordination and market administration functions; evaluate the operator's functions regarding future regional interconnection systems and markets; and propose improvements for transmission planning.

- ◆ Integration of energy planning: Consider institutional alternatives for comprehensive coordination on energy planning to expand electricity transmission, generation, and development of natural gas in-

frastructure, such as evaluating the viability of entrusting an entity with the function of structuring, conducting, and managing public auctions for the expansion energy infrastructure, and analysing the governance of energy planning.

- ◆ Dynamization of the natural gas market: Evaluate and propose alternative options to allow the secondary market of natural gas to be more efficient for natural gas producers and electricity generators, including the establishment of an entity to coordinate the operation and planning of natural gas and electricity markets.

- ◆ Modernization of publicly owned electricity companies: Identify barriers that prevent state-owned companies from adequately conducting the operational and investment management of their electricity supply business and establish requirements for a better corporate governance and performance.

- ◆ Strengthening of market regulation and supervision/monitoring: Identify modifications necessary to strengthen the administrative, financial, regulatory, and technical autonomy of the energy regulator, Osinergmin.

2. Transformation of the Wholesale Market

- ◆ Evaluation and adaptation of the short-term market: Enhance the current cost-based market. A day-ahead, financially binding forward market should be combined with a real-time market to clear imbalances associated to day-ahead energy sales and purchases. These two markets should allow generation unit owners (suppliers) and distribution companies and consumers (demanders) to participate symmetrically. This should include a formal monitoring process of the wholesale market along with a formal regulatory oversight and market design process.

- ◆ Reformulation of the long-term generation adequacy mechanism: Include a long-term resource adequacy approach to ensure adequate energy supply; this is to meet demand during all hours of the year, rather than having sufficient installed generation capacity to meet annual peak demands. Standardize fixed-price contracts for regulated users to increase competition, benefitting demand with lower prices for wholesale energy purchases.

- ◆ Efficient incorporation of generation from renewable energy resources: Consider the cost of renewable energy facilities, particularly with the global



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price reduction of wind and solar photovoltaic generation plants to develop policies that consider significant renewable energy resource shares in the short-term energy market.

◆ **Development of new complementary or auxiliary services market:** Design the ancillary services market in Peru to determine products to be traded, the demand for each product, and how the costs will be allocated to market—all considering that the challenges of integrating intermittent renewable resources has significantly increased the importance of operating reserves to maintain the real-time balance between electricity supply and demand.

3. Innovation in Distribution and Retail Marketing

◆ **Distribution revenue setting:** Provide network companies with adequate incentives to support decarbonisation, deliver adequate grid investments, use of new distributed resources efficiently, foster technological innovation, and provide value to current and future consumers.

◆ **Tariff design:** Remove residual costs from both volumetric and capacity components. Subsidies have to avoid distorting tariff signals. Prices and charges for electricity services should be non-discriminatory and technology neutral. Foster “prosumers” with adequate economic signals; distributed energy resources may have their economic value revealed only in the case where price signals convey an adequate level of granularity to capture the important variations in the cost of supplying electricity across time and space.

◆ **Unbundling of retail activity:** Separate free market retail activity from distribution and generation activities and progressively liberalize the different demand segments. Fine-tune long-term auctions and associated cost allocation; unbundle the regulated retailer from distribution companies and remove barriers (access to data and standardization, avoid non-cost reflective regulated end-user prices, smart meters).

4. Simplification/Modernization of Transmission Networks Regulation and Their Operation/Management

◆ **Discipline of investments in sub-transmission assets:** Assign responsibility for the implementation of sub-transmission investments to the distributor operating in the demand area where the asset is to be located; review the standard cost methodology to ensure that it does not unduly place risks on investors or induce implementation of sub-optimal technology.

◆ **Cross-border interconnection:** Regularly assess the benefits of further interconnection capacity. Designate an entity for cross-border commercial exchanges. Implement a robust cross-border exchange mechanism with neighbouring jurisdictions. Once wholesale markets in interconnected countries develop, move to more dynamic capacity allocation mechanisms (explicit or implicit capacity auctions).

The power sector is changing worldwide to improve utilities’ performance, ensure reliable power supply, and attract private participants, forcing countries to take a regulatory role. Currently, efforts to mitigate climate change and decarbonize the grid, along with the growth in renewable energy resources, are guiding policy makers and regulators to conduct different reform approaches to face technological disruption (distributed generation, demand-side management, data storage centers, and electric vehicles).

With that in mind, Osinergmin is committed to continue working to empower consumers by laying the foundations of a modernized sector. These far-reaching proposals are the fruit of intensive work, and we believe this transformation will allow Peru to face the challenges of our time.

The multisector commission, with the support of the consulting group, will provide a white paper, describing the details of the proposals and the necessary actions for transitioning to the new regulatory and institutional framework for the sector to be implemented in the next two years.

ARIAE

U.N. Sustainable Development Goal #7 in Ibero-America and the Challenge of Reaching the Last Mile: affordable, safe, sustainable and modern energy for all people

In these moments of enormous complexity, multilateralism is essential to sort out problems related to sustainability, to find innovative solutions to complex problems, and to envision a more prosperous future.

A recent publication entitled “The challenge of reaching the last mile: affordable, safe, sustainable and modern energy for all people” appraises the regulatory achievements of the countries of the Ibero-American region in reaching goal 7.1 of the United Nations Sustainable Development Goals—namely “ensure access to affordable, reliable, sustainable and modern energy.” This work is the result of the collaboration between the Ibero-American Association of Energy Regulators (ARIAE) and the Ibero-American Secretary General (SEBIG), including 26 contributions from supranational organizations, municipalities, and governments in the Ibero-American region.

The work begins by analyzing the importance of access to energy in the context of the United Nation’s [2030 Agenda for Sustainable Development](#), and the access situation in Latin America, paying special attention to the impact that the on-going COVID-19 crisis is having on all.

Next, the paper analyses the great challenges Latin America faces in achieving universal access in the coming years, sets up basic principles to guide action, and presents an agenda prioritizing six lines of work.

The publication concludes the region has reached a coverage level of 98 percent and has yet to achieve universal access. To achieve universal access, the region will need to supply electricity to approximately 12 million people, 90 percent of them in rural areas and the rest in peri-urban areas.

Nicaragua, Honduras, Guatemala, Bolivia, and Peru have high percentages of populations without access, while the largest economies in the region—Argentina, Brazil, Colombia, and Mexico—have more than four million people without access to electricity.

Although the total Ibero-American population without electricity is small in percentage, experience indicates that as electrifica-

Authored by: The full report has been prepared by the Ibero-American Association of Energy Regulatory Entities (ARIAE) and the Ibero-American General Department (SEGIB), supported by the Universal Access to Energy Table (MAUE), which is made up of the Center of Innovation in Technology for Human Development from the Polytechnic University of Madrid, Energy without Frontiers Foundation, the ICAI Engineers Foundation for Development; the Technological Research Institute (IIT); the International Spain Plan and Technological and Environmental Plot (Trama Tecnológica Ambiental).

It also received contributions from the following institutions: Government of Ecuador; Government of Peru; Development Bank of Latin America (CAF); FONPLATA Development Bank; Inter-American Development Bank (IDB); World Bank; Economic Commission for Latin America and the Caribbean (ECLAC); Latin American Energy Organization (OLADE); Brazil’s National Electricity Agency (ANEEL); National Commission of Markets and Competition in Spain (CNMC); Supervisory Agency for Investment in Energy and Mining in Peru (OSINERGMIN); Government of the State of Oaxaca, Mexico; Mayor of Mariscal Ramón Castilla, Peru; Mayor of Morropon-Chulucanas, Peru; Municipality of Munã, Panama; Mayor’s Office of Victoria, Honduras; acciona.org, Spain; Jujuy Company of Dispersed Energy Systems, Argentina; Energy Without Borders Foundation, Spain; Universal Access to Energy Laboratory, United States – Spain; Latin American and Caribbean Network of Clean Kitchens (RLCCL); National Unit for Disaster Risk Management, Colombia; and the Francisco José de Caldas District University, Colombia.

tion progresses, the difficulties and unit costs of electrifying the remaining homes increase, and the rates of electrification slow down.

The paper finds that challenges for the coming years are: 1) reaching the “last mile,” 2) going beyond basic access, 3) guaranteeing the supply of public services, 4) guaranteeing access reliability, 5) replacing unclean biomass stoves, and 6) innovating in access to energy. These challenges must be faced with the principles of universality, environmental sustainability, economic sustainability, social sustainability, and diversity in mind.

This important research work is available at the ARIAE website: <https://www.ariae.org/informacion-interes/anuncios-publicos-reguladores/la-xxvii-cumbre-iberoamericana-de-jefes-de-estado>.

CAMPUT

■ One Regulator’s Approach to Energy Efficiency and Electrification

Authored by Jackie Ashley, senior regulatory specialist at the British Columbia Utilities Commission.

Do your eyes glaze over when people talk about energy efficiency cost effectiveness tests? Do you think that utilities could be more proactive in the electrification space, but you are unsure about how to measure whether they are cost-effective?

A paper titled “Effectiveness and Balance: a Canadian Regulator’s Approach to Review of Energy Efficiency Funding Proposals,” by Jackie Ashley of the British Columbia Utilities Commission, was published by the International Association of Energy Economists in late 2020. The paper gives a plain English overview of how to identify whether an energy efficiency program is in the public interest, cost effective to ratepayers, and equitable. The paper also provides a simplified explanation of the ratepayer impact test, which is used in British Columbia to determine whether a utility electrification program is cost effective to ratepayers. To download the full paper, click [here](#).

■ Collaborative Research Fosters Regulatory Excellence

Authored by Patricia Larkin, senior research associate at the University of Ottawa’s Positive Energy program, and Cynthia Chaplin, CAMPUT executive director.

Strengthening confidence in the roles and responsibilities of public authorities is one of the most pivotal factors shaping Canada’s energy future in an age of climate change. It is also one of the most understudied factors. To help address this gap, CAMPUT, the association of Canada’s energy and utility regulators, and Positive Energy, an academic program at the University of Ottawa focused on strengthening public confidence in energy decision-making, recently completed a collaborative research project on public confidence in regulatory decisions.

The research aimed to identify and scale successful innovations in energy regulatory decision-making. Researchers first surveyed regulators and stakeholders about the most important drivers of innovation and then began case study research in two areas: innovation in formal two-way policymaker/regulator interactions and innovation in regulators’ public engagement processes. Researchers identified benefits,

barriers, trade-offs, and success factors, and offered a set of questions regulators can ask themselves when planning or assessing an innovative approach in these two areas. Presented as a tool, the questions can be reviewed and enhanced to suit an individual regulator's context.

Rather than summarize the full report (which you can read [here](#)), we want to highlight the method of this research collaboration to demonstrate the value of such collaborative arrangements in fostering regulatory excellence.

The project was guided by a seven-member advisory group, composed of senior representatives of both CAMPUT and the Positive Energy program. The Positive Energy research team took the lead on developing the research objectives and methodology in collaboration with the advisory group. This helped to ensure the research was both relevant and feasible, and it fostered trust and shared purpose between researchers and regulators.

The study was likewise undertaken in close collaboration. Positive Energy took the lead on research to ensure the work would be independent, but sought advisory group feedback throughout the study. For example, advisory group feedback significantly strengthened the survey, and CAMPUT drew on its networks to ensure the survey sample included a large number of regulators and stakeholders, including regulated entities, industry and consumer associations, and other non-government organizations. CAMPUT members of the advisory group affirmed that the selected case studies reflected CAMPUT member interests. They also fostered regulator participation in case study interviews.

This collaborative research process both fostered and reflected regulatory excellence. Not only will CAMPUT members benefit from the research findings, but the research process itself demonstrated member willingness to be open and transparent with the academic community. This is a less common example of stakeholder engagement, but one that helped to identify successful institutional innovations. Senior regulatory executives engaged in detailed and frank examinations of their experiences, knowing that findings—good or bad—would be made publicly available for the benefit of the regulatory community at large.

This innovative research project can serve as a model for future collaboration, while the process and study results will foster regulatory excellence within and beyond the CAMPUT membership.

Read the full report [here](#).

Act Two: Leading Women in Energy

Una Shortall, the former head of ICER's Women in Energy program, and Kathleen Riviere, the program's new leader, take a look back at ICER's first decade and look forward to its second.

Interview compiled and edited by Kate Griffith

A conversation with Una

Una Shortall, strategy and communications officer for the EU Agency for the Cooperation of Energy Regulators, helped to create the Women in Energy (WIE) program in 2013. She served the Council of European Energy Regulators for 16 years as founding secretary general and later as part-time deputy secretary general. An economist by training, she started her career in academia as a university lecturer and professional economist in regulatory spaces. Her passion for diversity and inclusion drove her work for WIE program, which she discusses here.

When ICER launched the Women in Energy program in 2013, what was the landscape of opportunity for women in the energy space?

Looking back now, I think we can see it as the moment when things started to shift. Energy has long been a male-dominated world. Women are generally under-represented, particularly in leadership positions. This was clearly in evidence at the World Forum on Energy Regulation in Quebec City, Canada, in May 2012. On the stage, there was a panel of 12 representatives of the regional associations of energy regulators from around the world—and only one



of them was female. That event was a wake-up call and sparked the concept of the ICER Women in Energy (WIE) initiative to promote the value and visibility of female energy professionals. Over the next 12 months, I gathered a small group of high-spirited women, the founding members of ICER WIE, to boost opportunities for women in energy, starting with our own regulatory authorities.

What goals did you start with?

Our primary focus initially was to put in place practical tools to help women, including training, female speaker targets, gender data collection, and mentoring.

We knew we needed to enhance women's skills through capacity building, to showcase their knowledge and excellence and, as energy regulators, to demonstrate leadership for the sector generally.

We adopted a policy always to have a leading female speaker in all sessions in our ICER events, as well as in the World Forum on Energy Regulation. We also encouraged the regional regulatory associations and their national members to apply this female speaker principle in their own events.

As part of this effort, we set out to establish the size of the gender gap and to shine a light on the issue through awareness. Since 2013, ICER has collected gender data to support the business case for helping women advance. We have training, a global mentoring programme, and networking opportunities. We wanted to attract more women and retain them. We also set a more ambitious goal of trying to change attitudes and culture.

How has that landscape changed or shifted over the years? Where are opportunities?

There are three significant shifts:
First is the major energy transi-

Getting to know Una the person

We asked Una a few fun but personal questions to get to know her a little better.

What is one thing people are surprised to learn about you?

I am a kids' football coach.

What is your superpower?

I re-energize quickly and breathe life into people and projects.

What's my power source? A run. Yoga. To belly laugh with a friend. All fully sustainable.

My superpower makes things grow. I invest my energy wisely, in people and projects that matter. I've discovered that it's the effort (or energy) that I put into something, and not the time spent, that makes a difference. This cuts across family and work life. So whatever I'm doing, I try to give it my full attention. Why? Because when I give it my energy, I see it flourish—be it relationships or projects.

If you could have one magic wish, what would it be?

To end world poverty.

tion away from fossil fuels. The major transformation to clean energy requires the energy sector to draw on all its best talents and find innovative solutions for a carbon neutral future. [The International Renewable Energy Agency's 2019 study on gender perspectives](#) shows that the percentage of women working in the renewable energy field is growing, although there is still more work to be done. New areas such as renewable hydrogen are emerging.



Photo courtesy of Una Shortall

Second, research has shown that diverse organizations perform better. Now, there is a much greater appreciation of the business case for diversity and inclusion in all sectors. I am hopeful of a future with equal pay and equal opportunities for all.

Third, the COVID-19 pandemic has forced many businesses to adopt remote working. The future could look more like a "hybrid" mix of home and office-based work. This could mean reduced commutes and



Photo courtesy of Una Shortall

better work-life balance for all. With many mothers opting to work part-time for family reasons, a shift to hybrid work could also enable more women to return to full-time work.

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

The challenges women face today and in the future are not very different to when ICER WIE started out because of the inherent gender imbalances in our society. A main challenge is to change the mindsets and stereotypes that persist regarding which academic disciplines and professions suit women versus men.

According to the World Economic Forum's **2021 Global Gender Gap Report**, it will take an average of 135.6 years for women and men to reach parity on a range of factors worldwide. The time it takes to close the gender gap has widened (by 36 years) in the past 12 months. This is a stark reminder that no sector and no country should be complacent, and that perhaps the challenges of the future are not so different than today.

This is why ICER's vision is for women to be attracted to the energy sector, to have equal opportunities, to be empowered, and to have the

self-confidence to succeed. Affordable childcare, shared caring and domestic responsibilities, work flexibility, equal opportunities in the workplace—these are part of the solution that will enable women and men alike to thrive in the energy sector.

What opportunities did you have in your career? What achievement are you most proud of?

I am grateful for several opportunities. My first was as founding secretary general of the Council of European Energy Regulators (CEER). I got to establish their HQ and their ways of working, a model of regulatory collaboration which endures today and whose tried and tested approach has been copied by other associations.

I had the privilege to set up ICER Women in Energy, meeting inspiring women from across the globe. I am so proud of our achievements: mentoring, storytelling, creating a network of women, training, and schools outreach. These were remarkable results from a small group of pioneering women dotted across the globe (long before online working was ubiquitous).

My proudest moment was when all the female participants of the

2018 World Forum for Energy Regulation stormed the stage in Mexico in a show of solidarity for our work. Aretha Franklin was blasting. It was truly moving. It was a highlight of the forum and framed the discussions across the three days of the event. We had come a long way from 2012.

What are your plans now that you are passing the baton to our next leader for the Women in Energy program?

The pandemic was a time for reflection and future planning for me. Some years ago, with a young family, I had decided to work part-time and with less responsibility. It enabled a better work-life balance and for to me to dedicate time to my passions. All too soon, our four cute kids have grown into independent teenagers on the cusp of adulthood and ready to take their place in the world. The timing was right, and I was ready for a new career challenge. I am delighted to have joined the EU Agency for the Cooperation of Energy Regulators (ACER) in an exciting new role in strategy delivery and communications. My plan is to continue to support energy regulators and to promote diversity and inclusion, but now from within ACER.



Photo courtesy of Kathleen Riviere

A conversation with Kathleen

Kathleen Riviere, executive director of the Organisation of Caribbean Utility Regulators, has been selected to lead the Women in Energy (WIE) program. Kathleen comes to this WIE leadership role with extensive experience in utility regulation—having formerly served as CEO, director of policy and regulation, and as a senior case officer for the Utilities Regulation and Competition Authority of The Bahamas—and with specific experience mentoring women in energy careers. Here, Kathleen discusses her plans for the next generation of the WIE program.

How did you first become aware of or involved with ICER's Women in Energy program?

I attended the 7th World Forum on Energy Regulation in 2015 in Istanbul, Turkey, met Una Shortall, and was introduced to the Women in Energy program. As the executive director of the Organisation of Caribbean Utility Regulators (OOCUR), which is one of the regional regulatory association members of ICER, I became involved when a call for mentors went out in 2018. I have been a mentor for three years now and am now the new coordinator for the program.

What do you see as the challenges and opportunities for women in the energy space as we move into a new decade for ICER?

We are still challenged by having women included in conversations or given a seat at the table; by equity in compensation, benefits, opportu-

nities, and so on; and by diversity in terms of race, age, work experience, and other areas. Opportunities include the development of new technologies and new areas to explore and learn. The sector is quite dynamic, and there will be opportunities for all—including women.

Are there any topics or issues that women face in pursuing energy careers that are particularly concerning to you?

A few issues of concern are:

1. Accessible and affordable child and elder care. Some women have to take a sabbatical to care for their children and elderly relatives because it is not cost effective to work and pay for those services. Or, in some cases, child and elder care are not available in a woman's immediate area and too far away to use.

2. There is still a "boys club" in energy, and we have to move away from that mentality. The person with the right experience and qualifications should be selected for each job versus just referring opportunities to "one of the boys."

3. The energy sector includes the whole gamut of opportunity, not only engineering. Therefore, women should not be only recognized if they have engineering backgrounds.

What challenges and opportunities did you personally have in your career? What achievement are you most proud of?

Challenges included not always being respected at the table because I am a woman with a background in accounting, as well as not being recognized early in my career because I was young, yet assertive.

Opportunities—my boss saw my potential and pushed me. He mentored me and over time, he would allow me "to hold his brief," or provide counsel on important matters.

I was willing to learn and open to various areas, so I embraced every opportunity to learn and be a panelist or moderator at various local, regional, and international fora.

The achievement that I am most proud of is that I have unknowingly impressed and mentored some young people over the years. They have told me that they admire that I have given them my time to discuss matters and recognize them. That is high praise to me. I want the sector to be left in capable hands; so, if I can inspire other young people in the sector, that is a great thing.

What are your goals as coordinator of the Women in Energy program? What are your plans for the first year of your leadership?

Una has done a great job with the Women in Energy program. I plan to build on that platform. A couple of goals include increasing the numbers in the mentoring program and creating ways to have more interaction with female high school and university students on the multitude of opportunities in the energy sector.

Let us pretend that you are mentoring everyone in the Women in Energy program: What is one piece of advice or encouragement that you would give to each of them?

Wow. Get yourself a support system to assist you throughout your career. That support system will likely change over time but get yourself one: coaches, mentors, your own personal board of directors, family, friends, work colleagues, paid assistance, spiritual advisor—whomever—to allow you to succeed.



Getting to know Kathleen the person

We asked Kathleen a few fun but personal questions to get to know her a little better.

What is one thing people are surprised to learn about you?

Despite my overall conservative nature, I can be adventurous and generally will try most things at least once.

When you were growing up, did you expect to find yourself working in energy? If not, what were your plans?

I grew up wanting to be an accountant. I am an accountant by profession and maintain my license. However, over 20 years ago, I entered the utility regulation space, including the communications, energy, and water sectors, and have not looked back. I enjoy the spaces and love that the sectors are dynamic, so there is always something new to learn.

What is your superpower?

I am an amicable person and can relate to people of all walks of life.

Where is your favorite place in the world?

That is a trick question. I have several, as I love to travel. They include Canada (the Maritime provinces; Prince Edward Island is just great, and I went to university in Nova Scotia, so there is a love for that province), Chaing Mai in Thailand (awesome Sunday market!), Valparaiso in Chile, Uruguay (take one of their wine tours), Hawaii (beaches and canyons in Kauai and ranches and volcanoes on the Big Island), and my home in The Bahamas (Abaco, Cat Island, and Exuma).

From

Kathleen to Una

and

Una to Kathleen

These two leaders had some questions for each other as well.

Kathleen: Una, if you had to do it all over again, would you still get into the energy space and, if so, why?

Una: Absolutely. Staying 20 years in the sector is telling—I have had the chance to grow professionally and take on leadership roles myself. With the move to clean energy, I'm so excited about where energy is headed and the leadership role of the sector itself in terms of getting to climate neutrality. Energy is center stage. It is showing climate leadership by decarbonizing, which in turn leads to the wider decarbonization of society. Energy is so interwoven into everything we do, how we live, how we produce and consume, and how we move around. If you want to work with talented people who want to make a difference, then energy is the space to be in. You get to re-imagine the future and empower consumers to contribute to the transition to a low-carbon economy. What a job!

Una: Kathleen, often when it comes to equality and gender, it is mostly women who are engaged. Men are the exception. Have you any ideas on how best to get male leaders and managers more engaged on equality and diversity issues?

Kathleen: I have a couple of ideas. 1) Target men's hearts. Put things in the perspective of what they would like for their mother, grandmother, aunt, wife, or daughter, and if that means to be treated unequally and excluded from the conversation. It generally hits a nerve when you put it in that perspective, unless they are totally chauvinistic. 2) Show them studies or other evidence that show the impact of having women and diversity improving an organization's overall operations and performance. Look at customer profiles and see if their organization's makeup and executive suite is representative of its customers. As an example: an undergarment conglomerate has 90 percent women as customers, but only 10 percent of its employees are women, and only 2 percent of women are in management. Those numbers are too far apart, and initiatives need to be implemented to narrow the gap.