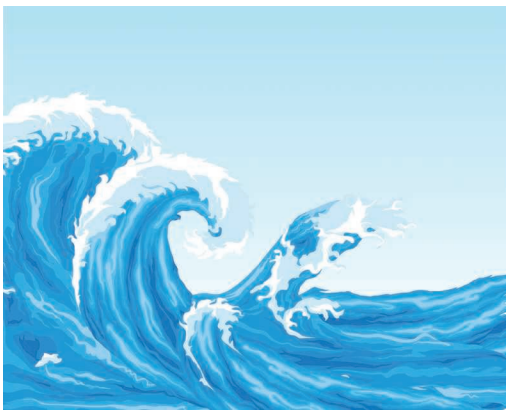
John Paserba

hydroelecric power

its past, present, & future

WHAT A YEAR 2020 HAS been so far. The biggest story has, of course, been the COVID-19 pandemic and its global impacts. So much has changed: the way we do business, the way we travel, our meetings and conferences, and how we interact with each other. As we all transition through wave one, wave two, or a quiescent period of the movement of this virus across the globe, our thoughts and sympathies are with everyone who has been adversely impacted in any way. Please continue to make wise choices and be safe.



FOOTAGE FIRM, INC.

Changing of the Changing of the Guard

In the July/August issue of *IEEE Power & Energy Magazine*, our editor-in-chief announced the final issue of his tenure, under the heading, "Changing of the Guard." Please join me in a heartfelt thank you to Mike Henderson for his excellent work and dedication to the pages of this magazine for 22 issues and for his prior service as an Editorial Board member, guest editor, and author. In my role as associate editor, History, Mike reached out to me to serve as interim editor-in-chief for the September/October and November/December issues, and I immediately agreed. How could I say no to a longtime fellow New York Yankees Major League Baseball fan?

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The IEEE Power & Energy Society (PES), under the leadership of Vice President of Publications Bikash Pal, launched a search and swiftly found an excellent candidate as a successor to Mike. We are pleased to announce that, effective with the January/February 2021 issue, Steve Widergren will be the editor-in-chief, and I will return to the friendly confines of my role as associate editor. Steve has been a PES member for 45 years, with the good fortune to work for major, innovative utilities early in his career before spending nearly 20 years with a solutions provider for power-control-center systems and an equivalent amount of time doing power systems research at a U.S. Department of Energy national laboratory. His experience straddles the crossroads where the iron and copper of power engineering meet the bits and bytes of the computer science that now permeate all business, art, and societal endeavors. He brings a love of writing and a resolute commitment to the magazine's mission: covering interesting power engineering topics in a plain, straightforward manner that educates all members of our profession as well as others who take an interest in our industry. Please join me in welcoming him as editor-in-chief and offer him your full support, be it as an Editorial Board member, guest editor, author, columnist, or cherished reader.

Mike Henderson

In This Issue

The theme of this issue is the past, present, and future of hydroelectric power. We are fortunate to represent authors and topics from around the globe through four feature articles:

- ✔ a view from India that looks at the development of hydropower

and its role in meeting the country's growth and sustainability goals

- ✔ a perspective from Norway that explores hydropower from a national context
- ✔ an outlook from Paraguay that details the life extension and modernization of one of the largest hydropower stations in that country
- ✔ a global look that examines energy storage in the form of pumped-storage hydro.

Along with the four articles, we have two additional articles in this issue.

- ✔ "Opportunities for Embedded High-Voltage Direct Current" highlights various features that an embedded high-voltage dc (HVdc) system brings to the legacy ac grid and describes a full-year simulation for 2030 for the German transmission grid with the planned embedded HVdc links.
- ✔ "Evaluating Distribution System Operators" discusses how distribution system operators may administer a flexibility-services market to improve grid performance and resilience. Using an example from Chile, the authors conclude that stakeholders should collaborate and implement intelligent strategies to guarantee a sustainable long-term vision.

The "In My View" column explores how current developments in hydropower will shape that energy source's future growth.

History

It has not been a common practice to match the "History" column to the theme of the issue. However, we had two nearly simultaneous submissions that aligned with this issue's theme of hydroelectric power. In the first "History" article, Adam Allerhand explores the first 30 years of hydroelectric power, from Northumberland, England, in 1878 to Croton Dam, Michigan, in 1908, covering both the private and the public installations of those times as well as the transmission systems associated with the hydropower plants. In the second "History" article, Deepak Tiku chronicles the Mohra Hydroelectric

Plant in the Valley of Kashmir on the Jhelum River, including the great challenge of dredging the waterway as part of the overall project.

Leader's Corner

In the "Leader's Corner," Miriam Sanders, IEEE Division VII director, shares her thoughts on her role and responsibilities as a representative of PES on the IEEE Board of Directors. In addition, she introduces a summary of the IEEE 2020–2025 Strategic Plan.

Vote

Every year, PES members have an opportunity to vote for the people who will represent them in various roles in the Society and the IEEE leadership. In 2020, we are voting for the IEEE Division VII director-elect. After one year as director-elect, the Division VII director serves on the IEEE Board of Directors for two years. As Miriam points out in her "Leader's Corner" column, Division VII consists only of PES. This year, we have two worthy candidates, Lalit K. Goel and Claudio Canizares. The July/August 2020 issue of *IEEE Power & Energy Magazine* contained their biographies, activities, accomplishments, positions, and statements. Voting opened on 17 August 2020 and will close on 1 October 2020. Please vote—it is your right and your responsibility.

Please vote—it is your right and your responsibility.

2020 IEEE Medal in Power Engineering

The IEEE Medal in Power Engineering is sponsored by the IEEE Industry Applications Society, the IEEE Industrial Electronics Society, the IEEE Power Electronics Society, and PES. The 2020 medal was awarded to Rik W. De Doncker with the citation, "for contributions to high-power and energy-conversion technologies." Please join me in congratulating Rik on this prestigious recognition.

PES Awards

PES is proud to announce the 2020 Society-level award recipients. They are selected through a comprehensive nomination and evaluation process. A list can be found in the "Awards" column. Please join us in congratulating this year's awardees for their exceptional achievements.

PES Meetings

PES-sponsored and cosponsored meetings and conferences are listed in the "Calendar" department. The PES General Meeting was modified from a face-to-face event in Montréal to a virtual conference on 2–6 August 2020. I am sure that the meeting was a success based on the hard work of the many volunteers and staff who planned and prepared for this pivot. Other sponsored and cosponsored meetings are listed in the calendar as virtual or hybrid, and others may change as this issue goes to press, including the IEEE PES T&D Conference and Exposition, which was cancelled for 2020. We will see you in New Orleans for T&D 2022.

Thanks

Mike, in his role as editor-in-chief, began a tradition of closing every "From the Editor" column with a list of thank yous. I will continue Mike's tradition here. I want to thank the guest editors, Girish Behal and Kimberly Laing, for their respective efforts with the feature articles and two columns in this issue. I would like to thank the authors of the four feature articles, the two additional articles, and the two "History" pieces as well as the columns and features. Robert Henderson went above and beyond the call of duty in assisting with this issue, and I thank him for his extensive efforts. As a novice interim editor-in-chief, I appreciate Geri Krolin-Taylor, senior managing editor, for her guidance and Maria Proetto, Shanon Nason, and Roseanne Jones, of the IEEE PES Executive Office, for their friendly advice and help on the PES content. The work of our IEEE Magazines Design team is always appreciated. A thank you to Mike Henderson for assistance and guidance along the way during this changing of the guard. Finally, I thank Mel Olken for encouraging me to take on the role of associate editor, History, in 2018, which put me in a position to step in as interim editor-in-chief during this brief transitional time for the magazine.