Message from Editors

As with the continuous advancement of the low-carbon energy development, the wind power generation experiences fast growth with 441.3 GW installed capacity by Dec. 2023. The high penetration of renewable energy, together with high penetration of power electronic equipment (namely, "double high"), has been altering the steady-state and transient characteristics of wind power generation in a profound way, resulting in the different risk of instability. These stability issues will seriously affect the consumption of renewable energy and threaten the safe supply of electricity. Along with rapid deployment of wind power generation, together with the solar photovoltaic generation, it is expected to be over 1200 GW by 2030.

It is a great honor for me to witness this great revolution and to meet many friends and colleagues in the process. We gathered here to discuss issues related to wind power generation, not only wind generator electromagnetic design, wind power generation grid-connected stability and fault ride through etc. In the next few issues, there will still be articles to continue this topic, and more extensive and in-depth exchanges around wind power generation performance improvements, grid-connection control and other content.

We would like to express our sincere gratitude to the reviewers who voluntarily participated in the reviewing process of each manuscript. We also thank all the authors who submitted their manuscripts to this Special Section. Finally, we sincerely appreciate the support from Z. Q. ZHU for his professional suggestions of this Special Section, Chunrui WANG, Yaxi ZHANG and other staffs from CES TEMS office for their editorial assistance.

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