World Electric Vehicle Journal

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Active Voltage and Frequency Support Control by the EV, New Energy and Energy Storages

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Message from the Guest Editors

With the proposal of the 'carbon peak' and 'carbon neutrality' policy, constructing a new type of renewable-integrated power systems has become the main direction of future development. Frequency and voltage stability has gradually become an important factor restricting the increase in penetration rate of renewables in power systems. However, the abundant controllable resources, such as EV and renewable energies, supply sufficient regulation space. Moreover, the high controllability and flexible power control methods of power electronic devices can provide new ways for system frequency control. Displacement of conventional generation via converter-connected resources reduces the available rotational inertia in the power system, which leads to faster frequency dynamics and less stable frequency behavior. EVs can represent a reliable solution for enhancing frequency stability due to their fast response and ability to provide a large amount of aggregated power. New energy sources such as wind and solar can also contribute to frequency regulation by adjusting their output according to grid conditions.

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Message from the Editor-in-Chief

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