CALL FOR PAPERS
IEEE TRANSACTIONS ON SMART GRID

Special Section on
Local and Distribution Electricity Markets

Scope:
Driven by the goals of clean energy and zero carbon emissions, the power industry is undergoing significant transformations. The rapid growth of diverse distributed energy resources (DERs) at grid edge such as rooftop photovoltaics (PVs) and electric vehicles is transforming the traditional centralized power grid management to a decentralized, bottom-up, and localized control paradigm. Establishing local and distribution-level electricity markets provides an effective solution to managing large amounts of small-scale DERs. New regulations such as the recent FERC Order 2222 in the U.S. open the door to DERs in the wholesale markets. Through coordinating the local and distribution-level markets with the transmission-level wholesale market, the DERs and prosumers can trade energy and flexibility locally with each other and meanwhile provide energy, flexibility and ancillary services to the bulk power grid. During this transition, there are many new technical challenges to address, calling for innovative ideas and interdisciplinary research in this promising direction. Advanced information and communication technologies (ICT) are needed, as a key enabler, for the development and practical implementation of local and distribution electricity markets. Research into local and distribution markets is strongly interdisciplinary, involving the state of the art in power engineering, economics, and digital/information technology. This Special Section invites a broad spectrum of contributors from universities, industry, research laboratories, and policy-makers to develop and present solutions and technologies that will facilitate and advance practical applications and implementations of local and distribution-level electricity markets to uncover the values of DERs.

This Special Section solicits original research papers that target at, but are not restricted to, the following topics.

- Market clearing and pricing in distribution and local electricity markets.
- Novel market architecture, valuation mechanisms, business models, utility rate structure, and energy policies for DER integration.
- Coordination and interactions between local, distribution, and wholesale markets.
- Market participation of DERs and DER aggregators at local, distribution, and transmission levels.
- Grid services trading such as flexibility and reserve in multi-level markets.
- Decentralized peer-to-peer energy and service trading, and distributed ledger technology including blockchain.
- Scalable optimization and control approaches for market integration of large-scale DERs.
- Advanced information and computing technologies (ICT) and data analytics to support the implementation of local and distribution markets.
- Field demonstrations, utility insights and lessons learnt, and use cases for local and distribution electricity markets.
This Special Section places an emphasis on joint academic and industry collaborations. Interdisciplinary and real-world-problem-driven research are of particular interest to this Special Section. Submissions from the industry are highly encouraged. It is also noted that papers dealing mainly with market issues in transmission systems without giving special attention to markets issues at MV and LV levels, DERs, active distribution networks, and/or microgrids will not be considered.

**Important Dates:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Mid-February, 2021</td>
<td>Issue of call for paper.</td>
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<tr>
<td>May 15th, 2021</td>
<td>Submission deadline for two-page extended abstract. (Abstract deadline has been extended to May 31st, 2021)</td>
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<tr>
<td>May 31st, 2021</td>
<td>Invitation for full paper submissions.</td>
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<tr>
<td>June 15th, 2021</td>
<td>Submission deadline for full papers and beginning of 1st review cycle.</td>
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<tr>
<td>September 15th, 2021</td>
<td>End of 1st review cycle and notification to authors.</td>
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<td>January 15th, 2022</td>
<td>Revised paper submission and beginning of 2nd review cycle.</td>
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<td>April 1st, 2022</td>
<td>End of 2nd review cycle and final notification to authors.</td>
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<tr>
<td>May 1st, 2022</td>
<td>Publication materials due.</td>
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<tr>
<td>May 2022</td>
<td>Publication of Special Section (early access on IEEE Explore).</td>
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**Submission Guidelines:**

Work that is not under consideration for publication in other venues will be considered in this Special Section. Two-page extended abstracts are required for initial review. Please submit a PDF version of the two-page extended abstracts, including a cover letter with the authors’ contact information, via e-mail to rbo@mst.edu before the aforementioned deadline. Authors of selected abstracts will be invited to submit full papers for review. Please refer to [http://www.ieee-pes.org/publications/information-for-authors](http://www.ieee-pes.org/publications/information-for-authors) for information on organization and formatting of submissions. Full papers from invited authors should be submitted at [https://mc.manuscriptcentral.com/tsg-pes](https://mc.manuscriptcentral.com/tsg-pes), selecting in the Manuscript Type drop-down menu box the Special Section on “Local and Distribution Electricity Markets”.

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