
Decentralized Electrification, Network Interconnection, and Local Power Markets – Assessment of Experiences and Ways Forward

Call for Papers for a symposium issue of “Economics of Energy and Environmental Policy”

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Topic: Decentralized Electrification, Network Interconnection, and Local Power Markets – Assessment of Experiences and Ways Forward

Motivation: Decentralized electrification remains an issue in the Global South, given fast economic and population growth (particularly in Sub-Sahara Africa), and the need to complement top-down electrification with bottom-up approaches. Technological progress has been rapid over the past decade, so that every village and every citizen could be electrically self-sufficient; however, technical and socio-economic challenges remain, such as the network interconnection between the national grid and mini- and nanogrids, and an efficient and just design of local electricity markets (fair tariffing of consumers and prosumers, equity of public services). Decentralized and digitalized energy approaches are becoming a new feature in many countries of the Global North as well, such as the cellular approach in California, peer-to-peer renewable energy grids in Brooklyn, sandbox experiments, citizen networks, pre-paid metered electricity (e.g. in the UK), and dynamic tariffing of prosumers (e.g. in Germany). Finally, the market entry of European utilities (Engie, E.ON, EDP) in the decentralized renewable energy market in the Global South through strategic acquisition of solar home systems and minigrid companies is seen as a way of learning from the technological and energy infrastructure development process.

This is a Call for Papers for a symposium (“Special Issue”) of Economics of Energy and Environmental Policy (EEEP) dedicated to these topics. Following up on the successful symposium on “Electricity access” (EEEP, Vol. 8(1)), covering the macro-perspective, this symposium explores electrification from a micro-perspective, combining technical and socio-economic factors. Contributions will be selected through a peer review process consistent with the reviewing procedures of EEEP submissions. The papers will be presented and discussed at an international conference to be held digitally, organized out of the Graduate School of Management (GSM) at BRAC University in Dhaka (Bangladesh), March 2-4 2021, reviewed and then published as a symposium (“special issue”) of EEEP in Volume 11(1), i.e. spring 2022. Papers of interest address, but are not limited to the following issues:

- What are drivers of success, but also obstacles to rural electrification, what remains to be done?
- What are technological pathways that have emerged, AC-DC issues, mini-micro-nanogrids, swarm grids, convergence or divergence of technologies, network seams issues, etc.?
- How do decentralized energy issues combine with more general issues of the “low-carbon transformation” and sustainable development in the Global South?
- What are country-specific or regional specific responses by business and policy?
- What lessons emerge from decentralized electrification and network interconnection in the Global North, e.g. California, Brooklyn, and other recent pilots?
- Are small power markets really beautiful?
- Is there a value for decentralized energy systems during the Covid-19 pandemic?

The symposium should be of benefit to policy-makers and researchers worldwide; every paper should be orientated towards policy recommendations. Given that the conference coincides with the 50th anniversary of independence in Bangladesh, some regional focus will be given to (South) Asia, but relevant experience and comparative analysis from other countries and regions of the world will also be included, as are papers on these issues in the Global North. Papers can be based on theoretical, numerical, and econometric modeling or case studies, but all should focus on energy economic and environmental issues, with clear policy conclusions.

Planned schedule:

Call for papers: December 15, 2020

Papers/extended abstracts: January 31, 2021

Information on acceptance: February 10, 2021

Digital conference March 2-4, 2021

Submission of final papers April 30, 2021

Review process

Final papers to EEEP September 2021

Online publication as EEEP Volume 11(1)

Instructions for authors: Please respond to this Call for Papers by January 31, 2021, by submitting a draft paper or an extended abstract (including a 150 word biographical sketch) to eeep@iaee.org. In the affirmative case, you will be invited to upload your paper to the submission portal of EEEP. Papers by junior researchers, such as PhD students, will also be taken into account for an additional publication of the conference proceedings.