

NEMA's Efforts on Smart Grid/Building Standards

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The Association of Electrical and Medical Imaging Equipment Manufacturers





About NEMA

The National Electrical Manufacturers Association (NEMA) is the association of electrical equipment and medical imaging manufacturers. Our more than 400 members make a wide range of products used in the generation, transmission, distribution, and end-use of electricity, including many Smart Grid devices. These technologies include:

- Smart Meters
- Sub-meters
- Automated Switches and Circuit Breakers
- Synchrophasors
- Smart Inverters
- Energy Storage Systems
- Microgrids
- Electric Vehicle Supply Equipment
- Demand Response-Enabled End-Use Technologies (e.g., lighting, motors)
- And more...



Need for Standards

Smart Grid technologies are evolving quickly, and buildings are increasingly used as a resource for energy efficiency, distributed generation, and load-shaping via demand response.

There is a need for codes and standards that ensure the safety and interoperability of the Smart Grid, and NEMA is at the forefront of these efforts.

NEMA is active in a range of Smart Grid standardization activities, but three primary areas relate specifically to how buildings interact with the Smart Grid:

- Demand Response
- Interoperability
- Safety



Demand Response Standards

IEC PC118 Smart Grid User Interface Committee

- NEMA is actively participating in the International Electrotechnical Commission's PC118 effort to standardize information exchange for demand response and the connection between demand response-enabled equipment and the grid.

OpenADR and SEP 2.0

- NEMA and its members are also participating in the OpenADR and SEP 2.0 efforts to standardize and automate how buildings and utilities interact with each other to relieve stress on the grid.



Interoperability Standards

Smart Grid Interoperability Panel (SGIP)

- NEMA was a founding member of the Smart Grid Interoperability Panel (SGIP), and continues to be active in the effort. NEMA's John Caskey is a Voting Director, and NEMA staff are engaged on many of the committees and working groups.

ASHRAE/NEMA SPC201P

- The Facility Smart Grid Information Model (FSGIM) Standard 201P is designed to define an abstract, object-oriented information model to enable appliances and control systems in homes, buildings, and industrial facilities to manage electrical loads and generation sources in response to communication with a “smart” electrical grid and to communicate information about those electrical loads to utility and other electrical service providers.



Safety Codes and Standards

National Electric Code ®

- One of NEMA's newest initiatives is to amend model codes including the National Electric Code® to ensure that it properly accounts for energy storage systems in buildings. It is essential that the proper considerations are developed to ensure the safety of life and property and also to minimize economic risk. Moreover, establishing requirements in model codes will potentially pre-empt the development of conflicting regulations developed between different authorities having jurisdiction (AHJs).



What's Next?

Smart Cities

- In the future, buildings will be increasingly interconnected with each other and the grid, and the need for standards will only increase.
- This interconnectedness will not only apply to buildings and the grid, but also to transportation, water, safety, and other urban systems.
- ANSI is in the early phases of convening a smart cities collaborative, similar to their efforts on the Energy Efficiency Standardization Coordination Collaborative.