

Panel 1: Residential Buildings: Technologies, Design, Operations, and Industry Trends

This panel will address a range of topics pertinent to energy use in new construction and existing homes. We will examine innovative technologies, design strategies, operational efficiencies, and emerging industry trends in the residential building sector. The following areas are suggested as potential categories for discussion, but they are not exhaustive:

- Balancing energy consumption with efficiency and cost-effectiveness
- Scaling up pilot projects for existing buildings to program-level requirements
- Moving technology solutions from the lab to the home
- Trending energy technologies or systems and their future
- Application of artificial intelligence in building sectors (e.g., fault diagnosis and smart home energy management systems)
- Integrated solutions and field challenges
- Storage integrated appliances, envelopes, and HVAC equipment
- Smart grids and demand response that enable residential buildings to interact with the grid, allowing for demand response participation during peak usage periods
- Ground source energy storage and heat retraction
- Waste heat recovery
- Innovative applications of fossil fuels