



## Invited Speaker

# Prof. Nikolaos Hatziargyriou

Professor Emeritus of Electric  
Power Division  
NTUA, Greece

## Power system resilience against natural disasters (G1102)

### Talk Title

Power System Resilience against Natural Disasters

### Biography

Nikos Hatziargyriou is with the National Technical University of Athens (NTUA), professor in Power Systems, since 1995, and Professor Emeritus, since 2022. He is Part-time Professor at the University of Vaasa, Finland. He has over 10-year industrial experience as Chair and CEO of the Hellenic Distribution Network Operator (HEDNO) and as executive Vice-Chair and Deputy CEO of the Public Power Corporation (PPC). He has participated in more than 60 R&I projects funded by the EU Commission, electric utilities and industry for fundamental research and practical applications. He is author of more than 300 journal and 600 conference proceedings papers, he is included in the 2016, 2017 and 2019 Thomson Reuters lists of top 1% most cited researchers and he is 2020 Globe Energy Prize laureate, the 2017 recipient of the IEEE/PES Prabha S. Kundur Power System Dynamics and Control Award and the 2023 recipient of the IEEE Herman Halperin Electric Transmission and Distribution Award.

# | Abstract

Extreme events, primarily natural disasters and climate-driven severe weather, have caused extensive damages in power systems, leaving millions of customers without electricity for several hours. Such events include wildfires in Australia, the Americas, and South Europe; flooding events in the UK, Italy and Spain; storms in the Americas; and earthquakes in Pacific Ring, etc. Handling with their sequences requires revisiting the current, traditional reliability frameworks in power system design and operation, that center on so-called credible (or “average”) outages, such as single or double faults, commonly referred to as N-1 or N-2 contingencies. In this presentation, the concepts between reliability and resilience will be clearly distinguished and the key dimensions and frameworks of resilience will be explained. Operational strategies for enhancing resilience, such as preventive unit commitment, defensive islanding, and microgrid deployment will be described and a framework to evaluate investment and planning approaches that balance infrastructure hardening, distributed energy resources, and digital solutions will be presented.