Virtual Course
Distributed Energy Resources Fundamentals Course
This foundational course provides a comprehensive overview of the DER landscape, use cases, potential grid services, and costs. Get insights on the challenges and opportunities for public power.

April 13, 2021
8:30 a.m. – Noon Pacific

Timing
Attend one, real-time virtual sessions from 8:30 a.m. – Noon Pacific on April 13. There will be a 15-minute break included in this session.

Learning Environment
This course will be held on the Zoom Meeting platform and features real-time presentation, utility examples/case studies, group discussion, and Q&A time.

Course Overview
The electric utility industry is undergoing a revolution. As the foundation of the legacy bulk electric system erodes, new grid models emerge with distributed energy resources (DERs) at the forefront. These technologies pose both daunting challenges and valuable opportunities for public power in rethinking the economics and management of their systems.

Get a comprehensive overview of the DER landscape, use cases, potential grid services, market players, and costs of DERs and discuss how to incorporate them into your strategic planning. Learn how new DERs are proliferating and impacting energy production, storage, management, and transactions. Discuss new technologies, new types of customers, changing customer expectations, new market participants, and evolving business models. Get insights on dealing with the challenges of lost revenue and increased costs and complexities while taking advantage of opportunities to diversify your business, upgrade your systems and operations, and respond to your customers and communities.

Course Topics
- Why DERs are proliferating
- What are DERs and what do they do?
    - Physical DERs (energy sources, storage, consumption, management)
    - Virtual DERs (energy efficiency, management, and transactive energy)
- Challenges and opportunities for public power
- Proactive approaches to DERs
    - Applications and case studies
    - Vendors and products
    - Planning, interconnection and operations policies

Recommended for
This foundational course is designed for utility staff and policymakers looking for a comprehensive overview of distributed energy resources.

Course Level
Basic: No prerequisites; no advance preparation. Attendees are requested to complete a one-question, pre-course survey on general course expectations and topics they're most interested in to help focus the discussion.

Instructor
Steve Collier is Vice President of Business Development at Conexon, LLC, which helps electric distribution utilities deploy fiber to the premises so that their customers can have true gigabit Internet access and so the utility can achieve the best possible smart grid solutions.

A well-known and highly regarded energy/telecommunications/information technology expert, Steve writes, speaks, teaches, and consults on the development of a modern, intelligent electric power grid. He has worked with Houston Lighting & Power Company, Power Technologies, Inc., Sandia National Laboratories, C. H. Guernsey & Company, Cap Rock Electric Cooperative, the Institute for Management Development and Change, Util-LINK LLC, the National Rural Telecommunications Cooperative, and Milsoft Utility Solutions. Steve is a member of the IEEE and served as chairman of the IEEE Industry Applications Society Rural Electric Power Committee and as member of the board of directors of IAS. He is a member of the IEEE Smart Grid Operations Committee and former chair of the IEEE Smart Grid Education and Marketing Committees.

Accreditation
The following continuing education credits will be provided, after successfully completing the full live session and filling out an online evaluation at the end. Completion certificates will be emailed out within a week of the course. This session will be recorded, though certificates can only be awarded to those who participate in the live event.

> **Recommended CEUs .3/PDHs 3.25/CPEs 3.8**
> Field of Study: Specialized Knowledge

Technology Requirements
Attendees are required to have strong Internet access, in order to run the Zoom meeting platform. You will need to enable computer audio to listen and speak (alternatively a call-in number will be provided) and it's also recommended that you have a webcam, so you can fully engage in a small group breakout exercise.

Course Access and Materials

- **Zoom Links:** Zoom log in credentials will be sent out 24 hours before the start of the course.
- **Course materials:** Attendees will receive access to APPA's secure online document portal a week before the course, where the course materials will be made available.
- **Recordings:** The session will be recorded and can also be accessed through APPA's document portal (within a week of the last class in the program), in case you can't attend the live version.