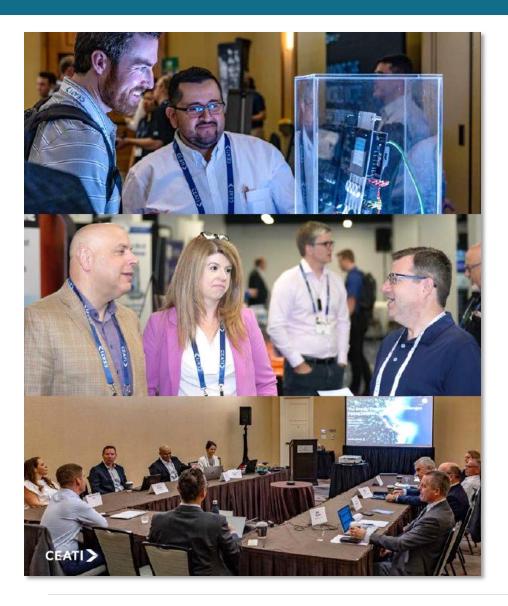


Agenda / Objectives

- > Quick CEATI introduction
- Energiforsk's membership in CEATI's Dam Safety Interest Group
- Access the CEATI member portal
- Where to find the DSMM translation and other resources

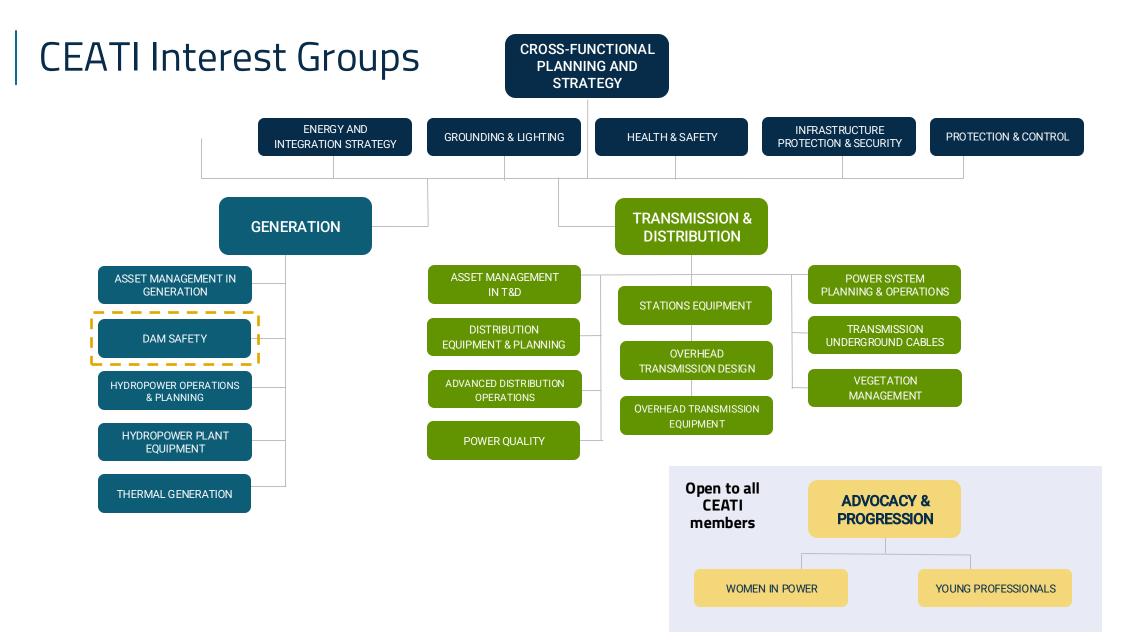
CEATI International

A technical, solution-driven network for power industry professionals



CEATI brings together **electric utility peers** to solve their biggest challenges through **collaborative research** and **knowledge exchange**.

- Closed-door, utility-only forum
- 155+ member utilities across 5 continents
- 20 interest groups focus on issues spanning all critical areas of power generation, transmission, and distribution
- CEATI membership is corporate, open to any staff at member organizations



Hydro Generation Groups:

Focus & Complementary Areas

Operations & Planning (HOP)

- · Hydropower planning and scheduling
- Water management
- Inflow forecasting
- Data Acquisition, validation and dissemination
- Meteorology & hydrology



Across Hydro Generation

- Extreme Events
- New & advanced technology



- Energy market impacts on hydropower operations
- Costs associated with start/stop and cycling operations
- Environmental factors

Plant Equipment (HPE)

- Powerplant equipment performance, operation and maintenance
- Hydropower technology
- Capital & maintenance investment
- Workforce safety
 - Maintenance programming & reliability
 - Environmental performance





- Public safety
- Instrumentation & monitoring
- Inspection & maintenance
- Management of aging infrastructure
- Dams as a system



- Preparing for and mitigating impacts of extreme events
- Climate Change impacts
- Using machine learning and Al



HPE/DS

- Asset & infrastructure management/maintenance
- Gates & penstocks



Current Members of Dam Safety

Membership at a Glance

84 Members

9 Countries Represented

86 Collaborative R&D Projects Completed

Algonquin Power and Utilities Ameren Corporation

American Electric Power (AEP)

Arkansas Electric Cooperative Corporation - new 2024

Avangrid Networks

Axpo BC Hydro

Brookfield BRP Holdings (Canada) Inc.

Bui Power Authority

Bujagali Energy - new 2024

California Department of Water Resources

Centralia City Light

Chelan County Public Utility District

CMS Energy

Constellation Energy Corporation

Denver Water Dominion Energy Duke Energy

Eagle Creek Renewable Energy East Bay Municipal Utility District

Energiforsk **Entergy Services Environment Agency**

Eugene Water and Electric Board

Federal Energy Regulatory Commission (FERC)

FortisBC Inc.

Four Lakes Task Force - new 2024

Genesis Energy

Grand River Conservation Authority (GRCA)

Grand River Dam Authority (GRDA) **Grant County Public Utility District**

Great River Hydro

Hetch Hetchy Water and Power

Hydro Tasmania Hydro-Quebec Idaho Falls Power Idaho Power Company Landsvirkjun Lewis County PUD

Louisville Gas & Electric and Kentucky Utilities (LG&E and Yuba Water Agency

KU)

Manawa Energy Manitoba Hydro

Merced Irrigation District

Mercury Energy Meridian Energy Ltd.

Metro Vancouver – new 2024 Ministry of Quebec - new 2024

Minnesota Power

Montana DNRC - new 2024 New Brunswick Power New York Power Authority

Newfoundland and Labrador Hydro

NorthWestern Energy Nova Scotia Power Inc. Oglethorpe Power Corporation **Ontario Power Generation**

Pacific Gas and Electric Company

PacifiCorp Patriot Hydro

Placer County Water Agency Portland General Flectric

Puget Sound Energy – new 2024 Relevate Power - new 2024

Rev Renewables Rio Tinto Alcan

Sacramento Municipal Utility District

Santee Cooper SaskPower Seattle City Light Severn Trent Water Ltd Snowy Hydro Limited Southern California Edison Southern Company South Feather - new 2024

Tacoma Power

Tennessee Valley Authority (TVA)

Thames Water Utilities Trans Alta Corporation **Turlock Irrigation District** U.S. Army Corps of Engineers U.S. Bureau of Reclamation U.S. Department of Energy

Yukon Energy Corporation

Dam Safety

Overview: The Dam Safety interest group develops and makes available cost-effective dam safety tools, expertise, leading edge technology and operational information. This is achieved through the interactive collaborative participation of a wide community of knowledgeable participants including dam owners, utilities, independent power producers, as well as government agencies.

Focus Areas

- Assessment, monitoring and management of aging infrastructure
- Challenges associated with changing operating conditions and extreme loading conditions
- Changes in the delivery models for dam safety oversight & services
- 4 Understanding of dams as systems
- 5 Public safety and emergency planning

Notable Members

BC Hydro, Duke Energy, Hydro-Quebec, FERC, Landsvirkjun, NY Power Authority, PG&E, TVA, US Bureau of Reclamation

Highlight Events, Content and Projects

Upcoming In-person Events:

- March 24, 2025: <u>DS General Meeting</u>— *Palm Springs, CA*
- March 25th 26th, 2025: <u>Hydropower Conference</u>—*Palm Springs, CA*
- March 27th, 2025: Technical Workshop Using Functional Block Diagrams for Understanding Dam Systems —Palm Springs, CA

Webinars:

- May 8th, 2024: <u>Communicating Risk to the Public FEMA and USACE</u>
- August 14th, 2024: <u>Wareham Spillway Interim Repair Project</u> <u>Challenges, Lesson Learnt in Yukon, Canada</u>
- August 27th, 2024: <u>US NASEM Study Update Modernizing Probable</u> <u>Maximum Precipitation Estimates</u>—*joint with HOP*
- November 13th, 2024: <u>Operational Safety of Dams in the Context of</u> <u>Climate Change</u> — *joint with HOP*

Projects:

- #0234 Best Practices for Inundation Mapping published Jan 2024
- #0258 Dam Safety Maturity Matrices (DSMM) Benchmarking Database

Member Testimonial

Dam Safety Maturity Matrices - <u>Watch Now</u>

Dam Safety Resources - General Meetings and Conference



Upcoming Events:

- March 24, 2025: DS General Meeting—Palm Springs, CA
- > March 25-26, 2025: <u>Hydropower Conference</u>—Palm Springs, CA
- March 27, 2025: Technical Workshop Functional Block Diagrams for Understanding Dam Systems (project #0260) — Palm Springs, CA



Get the most value from your CEATI membership

What's included in your membership:

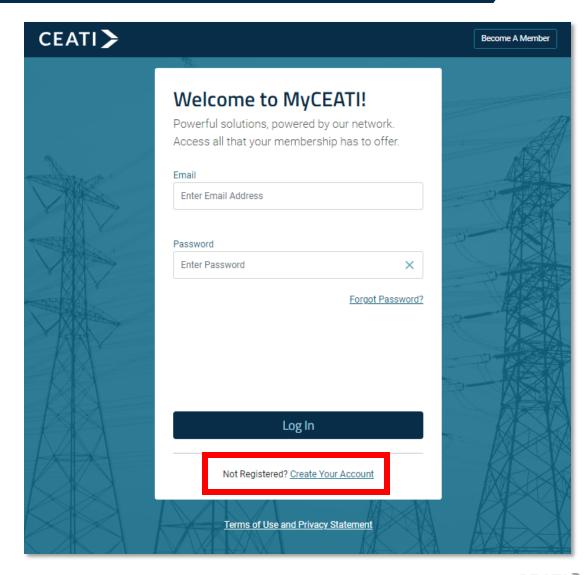
- Access our extensive library of research reports and guidance documents
- 2. Attend webinars and training workshops
- Use Information Exchanges to pose questions or share insights with fellow interest group members
- 4. Participate in **collaborative R&D projects**
- Join a working group (if available through your interest group)
- 6. Attend the **general meetings** for your interest group (twice per year)
- 7. Attend one of our **annual conferences** (2 tickets included per membership)





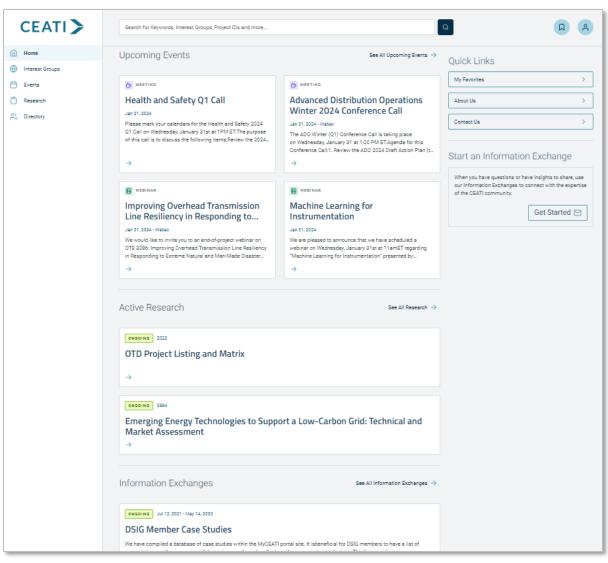
To get started, log in to the member portal

- Your organization has unlimited access to the member portal.
 - Portal access is aligned to your company email domain.
 - Anyone from your organization can selfregister using their company email address.
 - There is no cap on company-wide individual access (no limit on number of users).
- Portal self-registration:
 - Visit <u>my.ceati.com</u> and click "Create Your Account" at the bottom of the page.
 - Email <u>support@ceati.com</u> if you encounter problems creating your account.



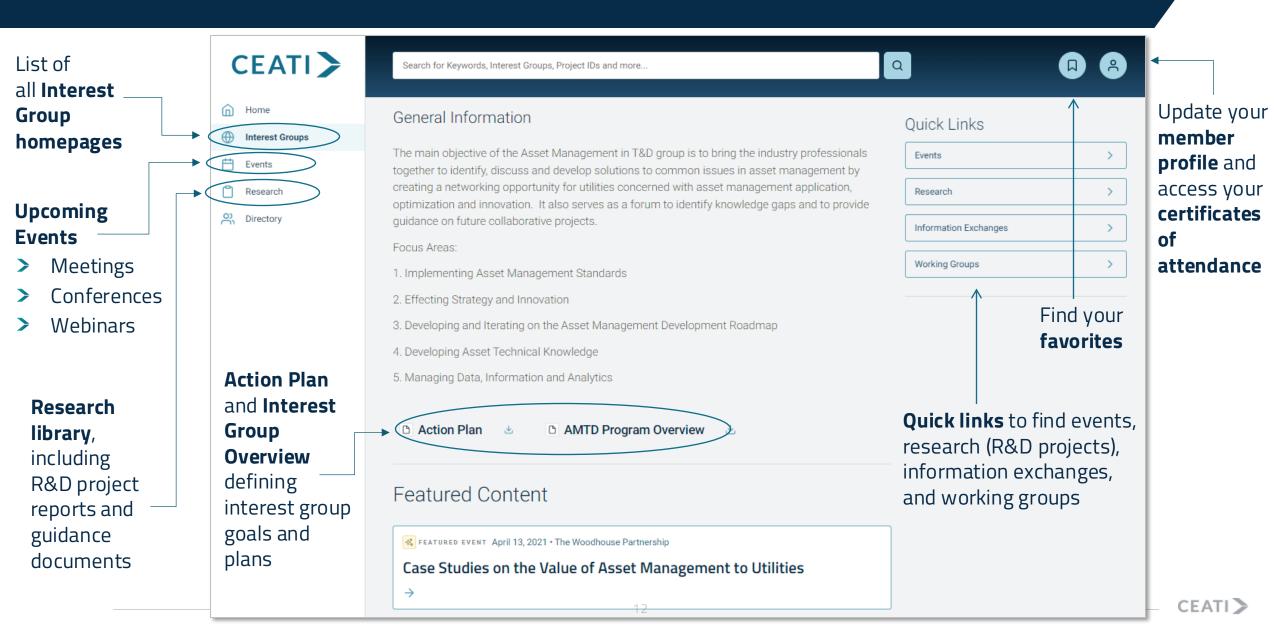
Member Portal: Brief Demo

- Member portal login: my.ceati.com
 - Anyone at your organization can selfregister using their company email address.
 - Click "Create Your Account" at the bottom of the login page.
- You will use the portal to access key resources:
 - Research library
 - Active R&D projects
 - Events (upcoming and past)
 - Information exchanges
 - Member directory



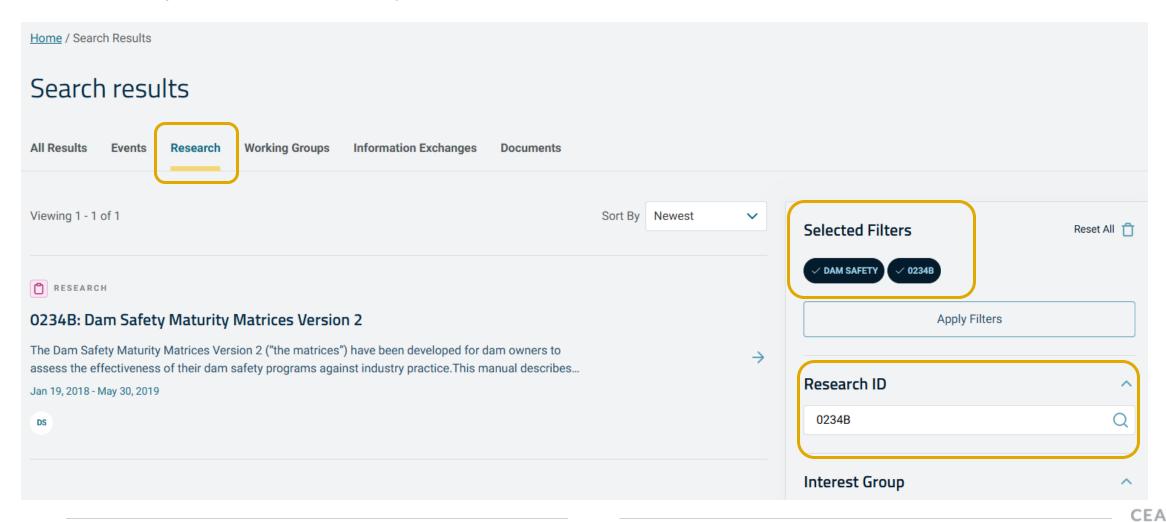


Member Portal: Overview for reference



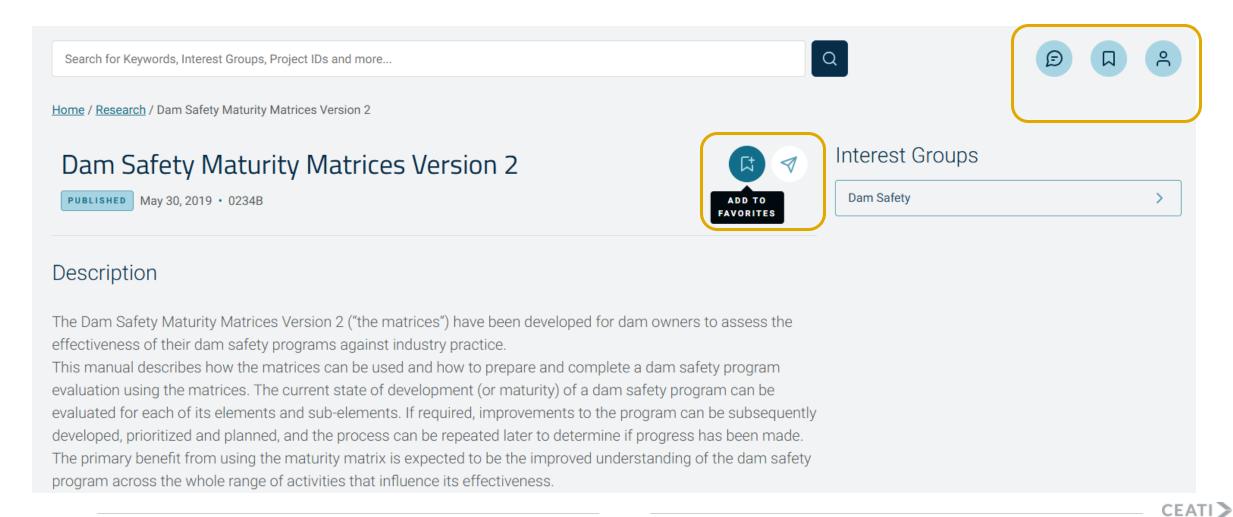
Member Portal: DSMM page

<u>Dam Safety Interest Group</u> page --> Research tab --> Research ID #0234B



Member Portal: DSMM page – add to favourites

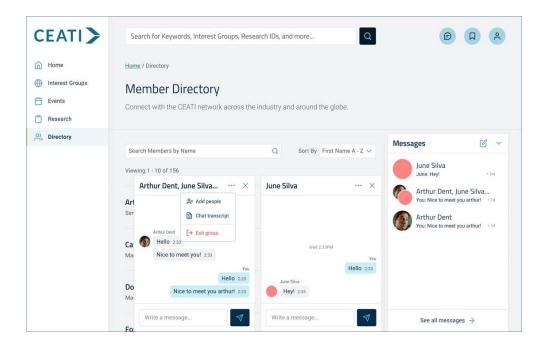
Add to favourites and find it quickly on the top right corner

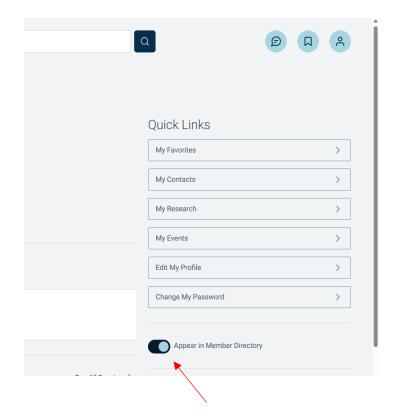


Member Portal New Feature Highlight: Messaging

This feature helps expand the networking options available to you as members! Use the new messaging feature to:

- ✓ Find members with specific expertise to help solve problems.
- ✓ Poll a small group of peers to get a quick answer to a key problem
- ✓ Connect with fellow members after an event to continue conversations

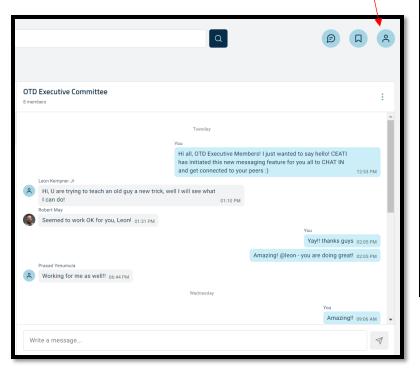




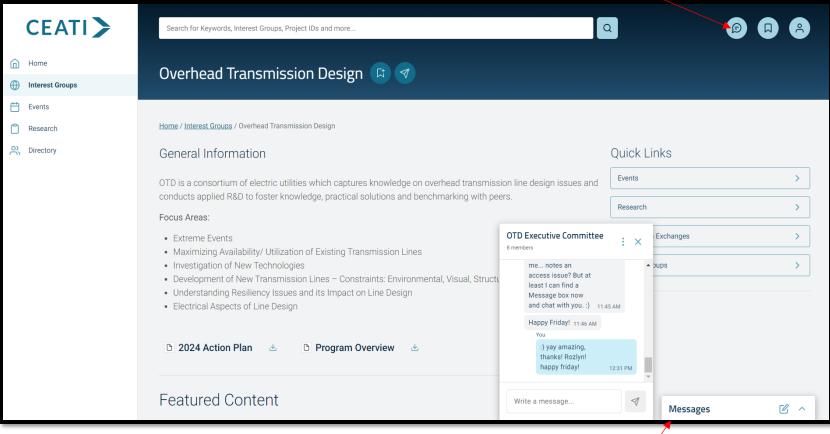
Note: Update Your Profile & Opt-In

Member Portal New Feature Highlight: Messaging

NOTE: Anyone registered to the MyCEATI Portal account has access to the directory and can access the messaging feature.



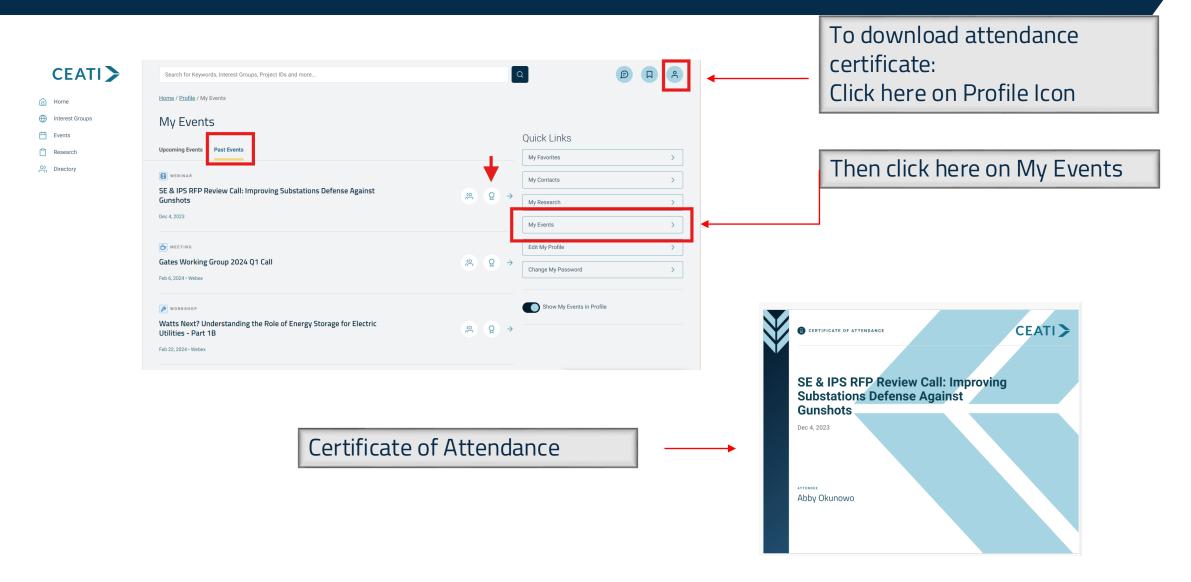
Click here on Message Icon



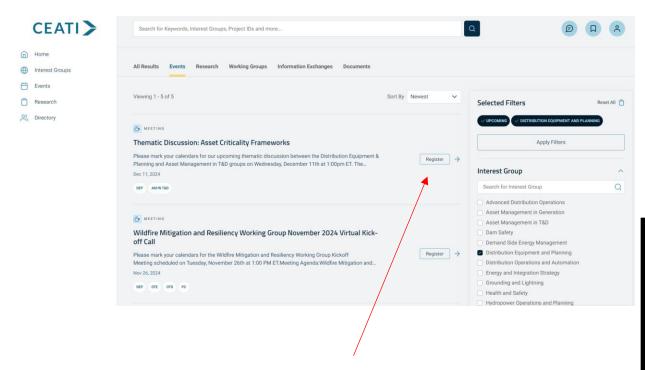
You can also have access to the pop-up icon on the Message Icon

CEATI >

Member Portal New Feature Highlight : Attendance Certificate

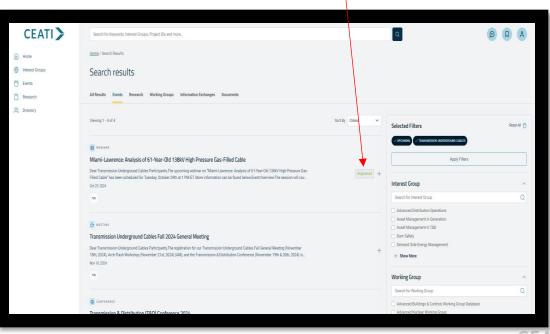


Member Portal New Feature Highlight: Events Registration



Click the "Register Button" to register for an event, notation on the right side of the event.

If you have already registered for an event, you can see that **"Registered"** notation on the right side of the event.



Submit an information exchange

"Always on" activity: Information exchanges

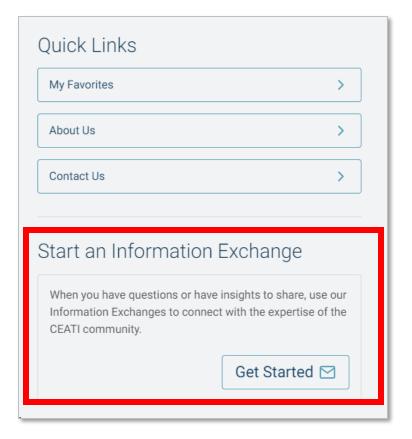
Information exchanges are available to all CEATI members as an on-demand tool to pose pressing questions to fellow interest group members and get answers fast.

Members can submit question(s) to CEATI, and our team will review and provide input (as needed) prior to distributing to the relevant interest group(s).

Responses are compiled and shared broadly via the member portal. They are usually available within 2-3 weeks.

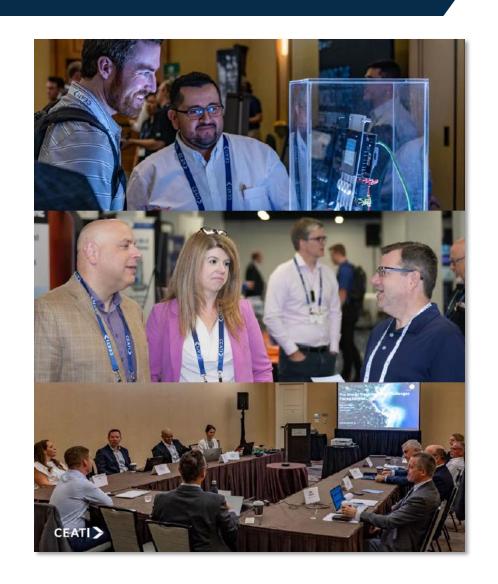
Members can leverage information exchanges as needed to access the expertise of the CEATI network 365 days per year.

On the member portal homepage:



Next steps to get started with your CEATI membership

- □ Access and set up your profile in the MyCEATI portal
- ☐ Check <u>upcoming events</u> in your group(s) and register to attend a member webinar
- □ Review the most recent <u>projects and</u> research in your group(s)
- ☐ Reach out to a fellow CEATI member through the <u>directory</u>, introducing yourself







Hydropower Operations and Planning

Overview: The goal of the Hydropower Operations & Planning interest group is to develop and make available **cost-effective** water management expertise, tools, and leading-edge technology through collaboration across a wide community of knowledgeable participants including utilities, independent power producers, government and other agencies.

Focus Areas

- 1 Meteorology & Hydrology
- 2 Data Acquisition, Validation & Dissemination
- 3 Water Management
- 4 Hydropower Planning and Scheduling

Notable Members

BC Hydro, BPA, Hydro-Quebec, Landsvirkjun, Manitoba Hydro, NY Power Authority, PG&E, TVA, US Army Corps of Engineers

2024 2H Highlight Events, Content and Projects

Webinars:

- August 27th, 2024: <u>US NASEM Study Update Modernizing</u> <u>Probable Maximum Precipitation Estimates</u>—joint with HOP
- October 2nd, 2024: <u>Advance Inflow Forecasting and Reservoir</u>
 Operations using Leading Edge Meteorological and Hydrologic <u>Science and Applications</u>

In-person Events:

- September 17-18: "Seasonal Volume Forecasting Training" Fort Worth, Texas
- September 19: Hydropower Operations & Planning Fall
 2024 General Meeting Fort Worth, Texas

Projects:

- Getting Paid for Hydro Transformation ongoing
- Benchmarking Water Management Business Process update in progress

Member Testimonial

Justification for Increasing Staff Resources - <u>Watch Now</u>

Hydropower Plant Equipment

Overview: The Hydropower Plant Equipment interest group is a collaborative, technology-focused program designed to assist hydroelectric utilities in their efforts to optimize capital and O&M costs, extend equipment life, increase reliability, and reduce outage times for hydro power plant equipment repair and maintenance.

Focus Areas

- 1 Hydropower Technology
- 2 Capital and Maintenance Investment
- 3 Maintenance Programming and Reliability
- 4 Work Force Productivity and Safety
- 5 Environmental Performance

Notable Members

BC Hydro, BPA, Duke Energy, Hydro Tasmania, Hydro-Quebec, Landsvirkjun, NY Power Authority, PG&E, TVA, Uganda Electricity Generation, US Army Corps of Engineers

2024 Highlight Events, Content and Projects

In-Person Events:

- March 18-22, 2024: <u>Hydropower Conference</u> and Spring General Meeting – Palm Springs, CA
- September 17-19, 2024: Fall General Meeting and OEM Workshop
 Fort Worth, TX

Training:

NERC Standard Training Workshop Part 4: PRC-019 (October)

Webinars:

- Hydro Generators' Brushes, Brush Holders & Slip Ring Maintenance Best Practices (June)
- Webinar series on Guidance for Tech Specs for the Procurement of Major Hydraulic Plant Equipment (L&S, Voith, GE, Reivax, Basler, Andritz) (Q2 to Q4 period)

Member Testimonial

Rotor Pole Repair - Watch Now

Asset Management in Generation

Overview: The Asset Management in Generation Interest Group brings utility asset management professionals together to identify challenges and share solutions surrounding asset management development, implementation, operation, evaluation, optimization, and innovation.

Focus Areas

- 1 Strategic Challenges
- Emerging Trends and their impact on Existing Technologies
- 3 Risk and Resilience
- 4 Data Management and Analysis
- 5 Organizational Alignment and Effectiveness

Notable Members

Hydro-Quebec, Bonneville Power Administration, New York Power Authority, Southern California Edison, SaskPower, Omaha Public Power District, Tennessee Valley Authority

2024 Highlight Events, Content and Projects

- Projects:
 - Best Practices for Asset Performance Management (APM)
 Software
 - Asset Class Strategies for Battery Energy Storage Systems
 - Generation Guideline for Risk Management
 - Whole Life Cost Models for Generation Assets
- Trainings/ Webinars:
 - CEATI-AMCL Asset Management University (through 2024)
 - Asset Failure Curves (September 2024)
 - Data Management & Analysis (September 2024)
 - Design Thinking for Strategic Planning (October 2024)
- Working Groups:
 - CMMS
 - Data Management and Analysis

Member Testimonial

KPIs for Asset Management - <u>Watch Now</u>

