

HVDC Technology for the Next Generation Power Grid

Online (UTC: 8:00 –10:10)

October 15, 2025

UTC+2:00

UTC+7:00

UTC+8:00

UTC+9:00

UTC+10:00

10:00–12:10

15:00–17:10

16:00–18:10

17:00–19:10

18:00–20:10

Amsterdam, Brussels, Essen, Paris, Trondheim

Jakarta

Beijing, Singapore, Manila, Kuala Lumpur

Seoul, Tokyo

Brisbane



10th IERE Webinar on High Voltage Direct Current (HVDC)

Background picture: HVDC valve hall (courtesy of Hitachi Energy)

TIPs for Attendees -1

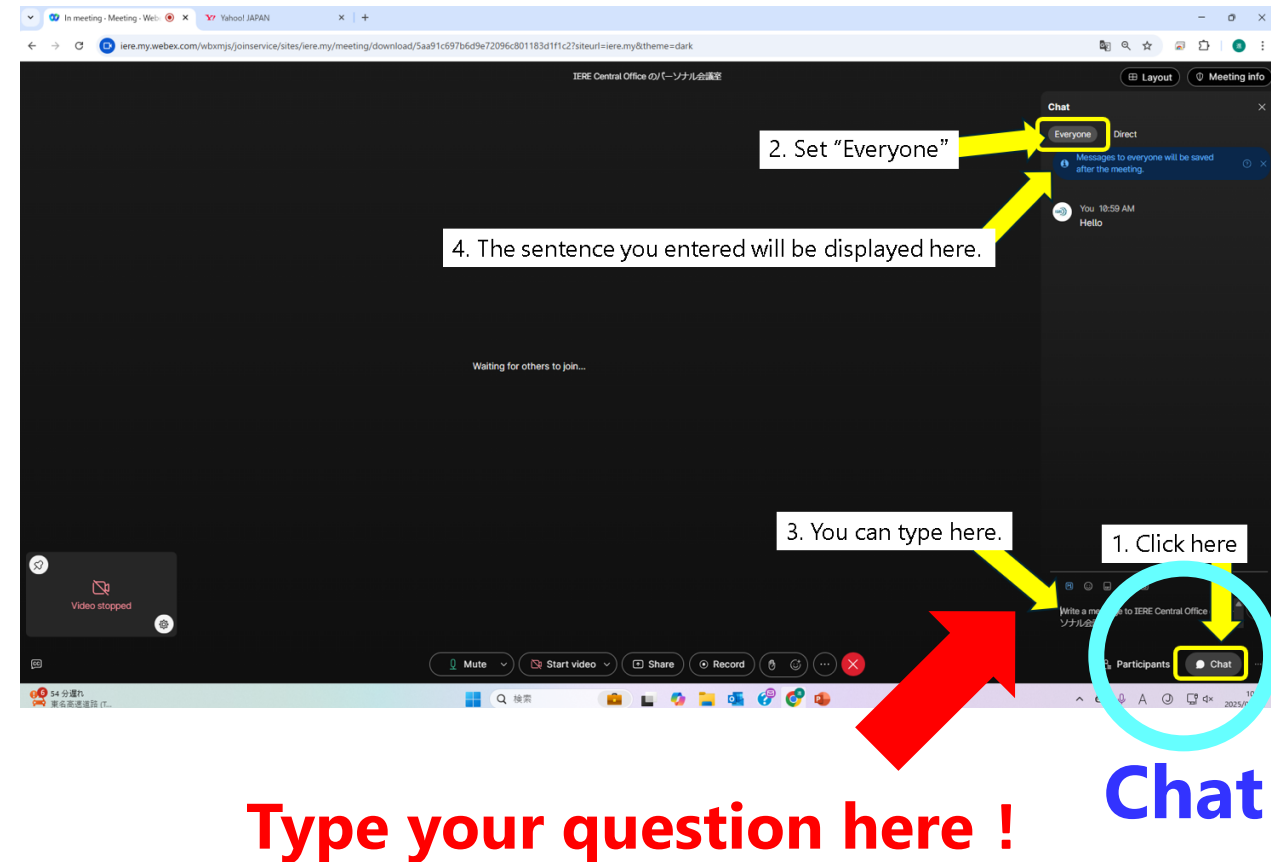
■ Finding the Chat box

The **Chat Box** can be opened through your Webex menu. This is used for submitting your **content-related questions** anytime.

Please **specify which presenter**
the question is for and send your
question **to Everyone**.

During the Q&A time, the moderator will select the posted questions and the presenter will answer them.

In addition, technical questions about webinar connections such as images and sounds can be put in the Chat Box. The staff of Central Office will support you.



TIPs for Attendees -2

■ Presentation Materials

Presentation materials are available at the following URL.

<https://www.iere.jp/events/webinar/2025-hvdc/index.html>

Activities



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Webinar on HVDC Technology for the Next Generation Power Grid

In recent years, High Voltage Direct Current (HVDC) transmission technology has gained significant attention due to its potential for efficient energy transfer and reduced environmental impact. HVDC is poised to become a key technology in supporting next-generation power grids. It offers advantages such as long-distance, high-capacity power transmission, efficient integration of renewable energy sources, and interconnection between Alternating Current (AC) grids. However, the unique characteristics of HVDC systems, which differ significantly from conventional AC transmission, often pose challenges for understanding, even among engineering professionals. Europe has been at the forefront of HVDC development and implementation, and its practical application is progressing in China. While regional differences exist, we believe sharing this information will be highly beneficial, which is why we decided to organize this webinar. This webinar will cover a wide range of topics, including the fundamentals of HVDC technology, its applications, and the latest industry trends. To make the content accessible to participants without prior expertise in this field, we will begin with a clear explanation of the basics and present specific examples of how HVDC technology can be applied in real-world energy systems. Practical insights will also be shared to ensure that attendees gain knowledge relevant to their areas of expertise. Through this webinar, you will develop a foundational understanding of HVDC technology and gain valuable insights into its innovations and applications in the energy industry. Additionally, we hope to emphasize the critical role of HVDC in future energy systems and inspire participants to explore ways to incorporate HVDC into their own areas of expertise. We invite you to join us and take advantage of this opportunity to deepen your knowledge of HVDC technology. Following the webinar, we will offer interested participants to take part in the next phase, such as a workshop.

Open to the Public
Register Now

❗ TIPs for Attendees



Click here!

Updated October 10, 2024

Open to the Public
Download Presentation Slides



10th IERE Webinar on High Voltage Direct Current (HVDC)

Program (Tentative)

Moderator: NAKAJIMA Tatsuhito (Tokyo City Univ.)

(UTC)	Title	Presenter	Organization
8:00	Opening Address	TAKEI Katsuhito Secretary General	IERE
8:05	Introduction	NAKAJIMA Tatsuhito Professor	Tokyo City Univ. (Japan)
8:20	Development and Application of Controllable Line Commutated Converter(CLCC).	YANG Jun HVDC Department	CEPRI (China)
8:45	The direction of HVDC network development in GB	Benjamin MARSHALL HVDC Technology Manager	The National HVDC Center (UK)
9:10	Grid Forming Control and Virtual Inertia Support by HVDC systems	Jon Are SUUL Senior Research Scientist / Adjunct Associate Professor	SINTEF Energy Research / NTNU (Norway)
9:35	HVDC application and project cases	NISHIOKA Atsushi Country M/S Manager, HVDC	Hitachi Energy (Japan)
10:00	Report on Survey Results	TAKEI Katsuhito Secretary General	IERE
10:05	Closing	NAKAJIMA Tatsuhito Professor	Tokyo City Univ. (Japan)

Background

- In recent years, High Voltage Direct Current (HVDC) transmission technology has gained significant attention due to its potential for efficient energy transfer and reduced environmental impact. HVDC is poised to become a key technology in supporting next-generation power grids.
- It offers advantages such as long-distance, high-capacity power transmission, efficient integration of renewable energy sources, and interconnection between alternating current (AC) grids. However, the unique characteristics of HVDC systems, which differ significantly from conventional AC transmission, often pose challenges for understanding, even among engineering professionals.
- Europe has been at the forefront of HVDC development and implementation, and its practical application is progressing in China. While regional differences exist, we believe sharing this information will be highly beneficial, which is why we decided to organize this webinar.

Objective

- This webinar will cover a wide range of topics, including the fundamentals of HVDC technology, its applications, and the latest industry trends. To make the content accessible to participants without prior expertise in this field, we will begin with a clear explanation of the basics and present specific examples of how HVDC technology can be applied in real-world energy systems. Practical insights will also be shared to ensure that attendees gain knowledge relevant to their areas of expertise.

Way Forward

- Through this webinar, you will develop a foundational understanding of HVDC technology and gain valuable insights into its innovations and applications in the energy industry. Additionally, we hope to emphasize the critical role of HVDC in future energy systems and inspire participants to explore ways to incorporate HVDC into their own areas of expertise. We invite you to join us and take advantage of this opportunity to deepen your knowledge of HVDC technology.
- Following the webinar, we will consider inviting interested participants to take part in the next phase, such as a workshop.

Report on Pre-Survey Results (1)

—Company/Organization Name

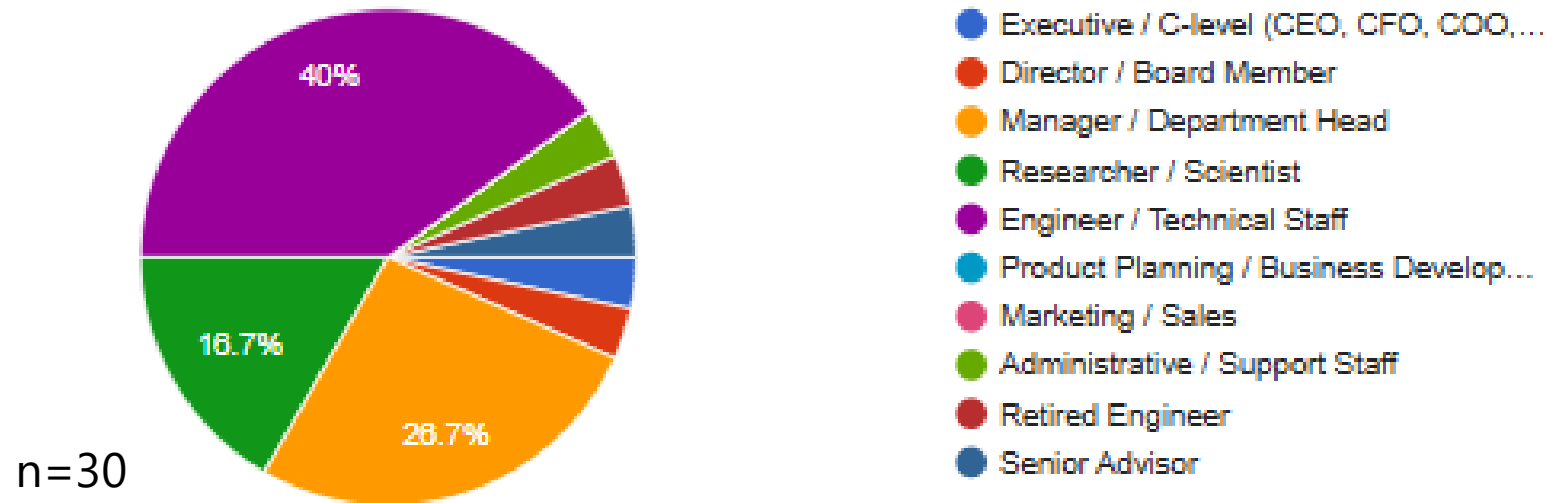
Survey distribution: 118

Respondents: 30

Response Rate: 25%

CRIEPI: 3, Hitachi: 2, other:1

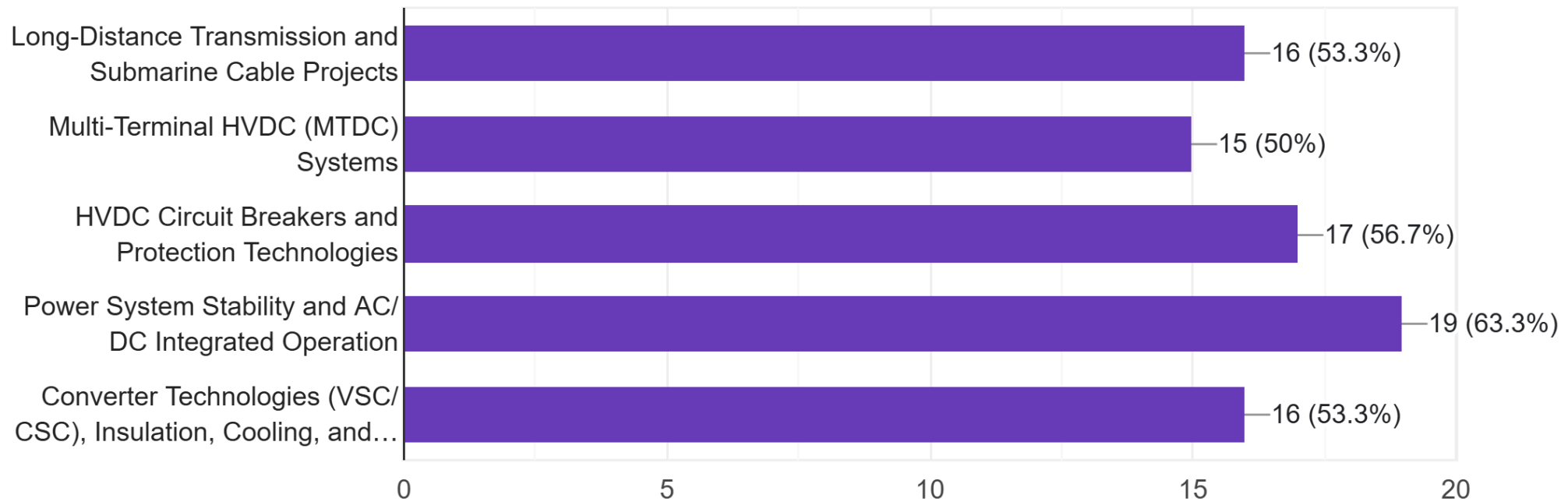
—Job role



Report on Pre-Survey Results (2)

Q1. Which areas of HVDC technology are you most interested in? (Multiple answers allowed)

30 responses

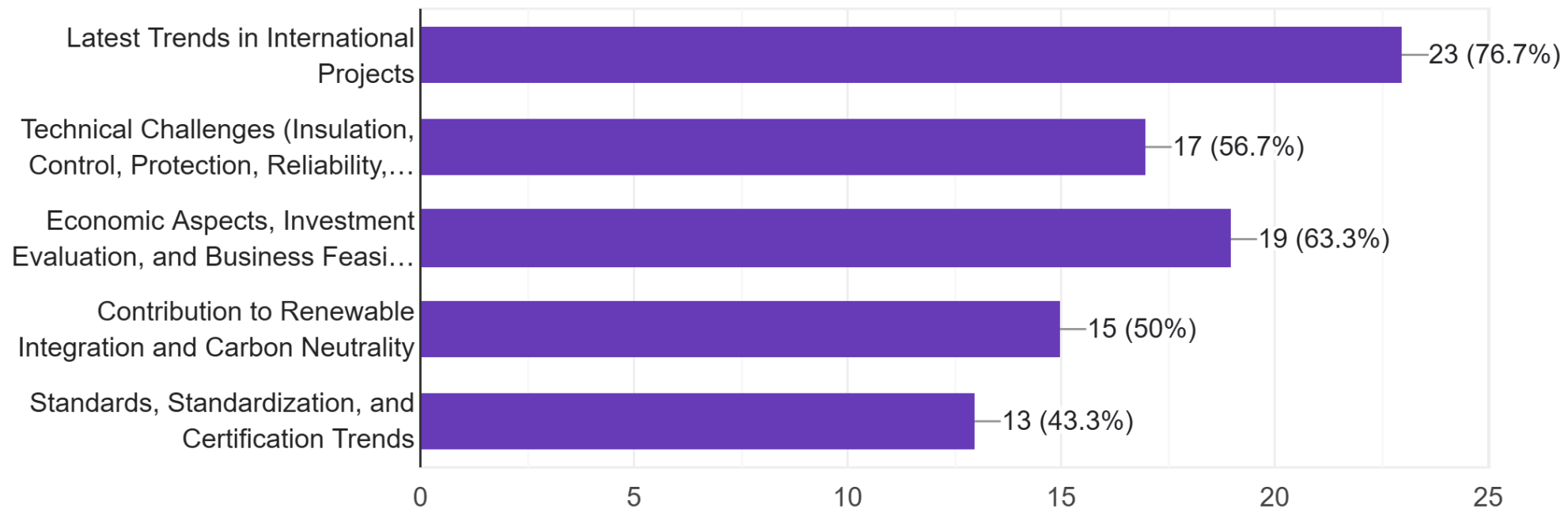


Participants showed broad interests in HVDC technology.

Report on Pre-Survey Results (3)

Q2. What kind of knowledge on HVDC technology would you like to gain? (Multiple answers allowed)

30 responses

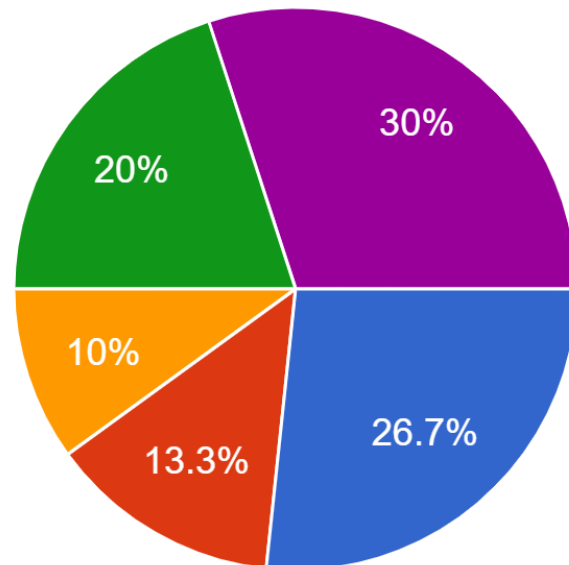


The latest trends in international projects have attracted significant attention.

Report on Pre-Survey Results (4)

Q3. What is the current status of HVDC-related initiatives in your company (or organization)? (Single choice)

30 responses



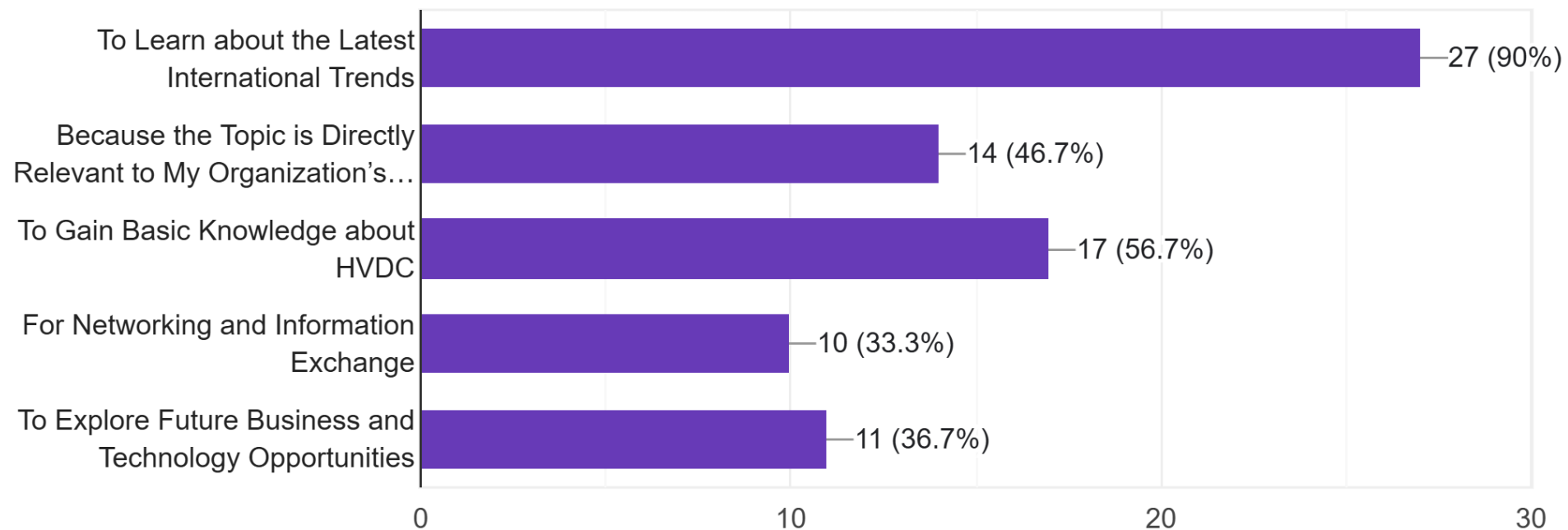
- Already Participating in Multiple Projects
- Considering or Planning Participation in Projects
- Conducting Technology Development and Research
- Need for HVDC Introduction, but No Concrete Plan Yet
- No Particular Involvement

HVDC-related initiatives are at various stages of progress.

Report on Pre-Survey Results (5)

Q4. What is your main reason for attending this webinar? (Multiple answers allowed)

30 responses

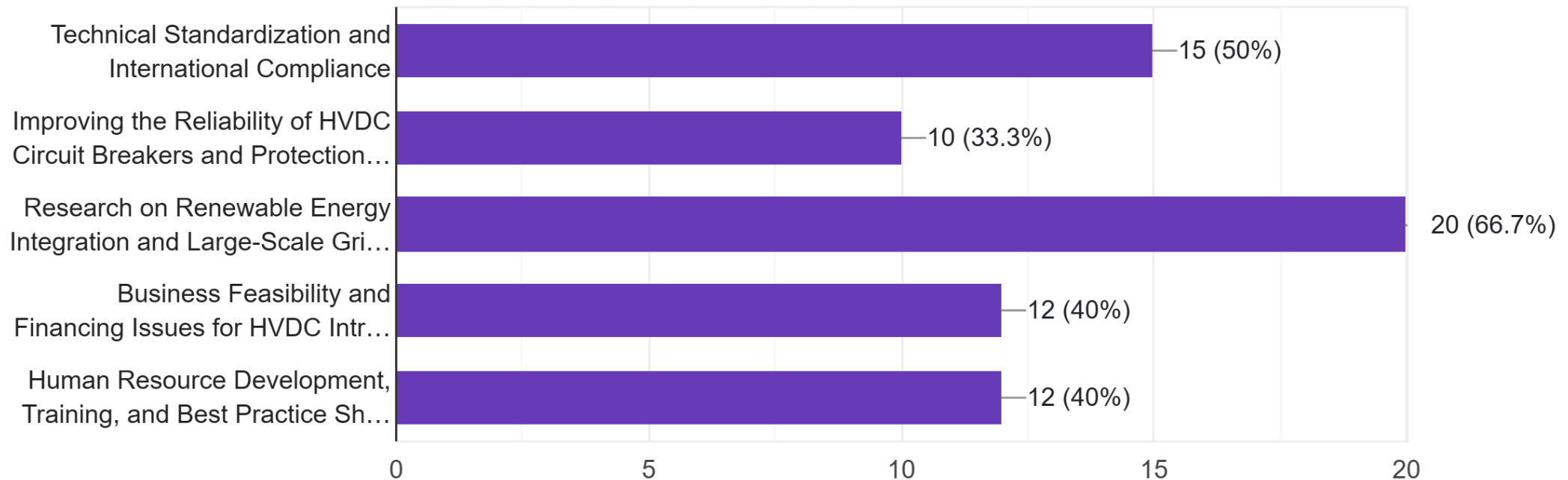


Information on the latest international trends has attracted significant attention.

Report on Pre-Survey Results (6)

Q6. Which themes do you think IERE members should work on together regarding HVDC? (Multiple answers allowed)

30 responses

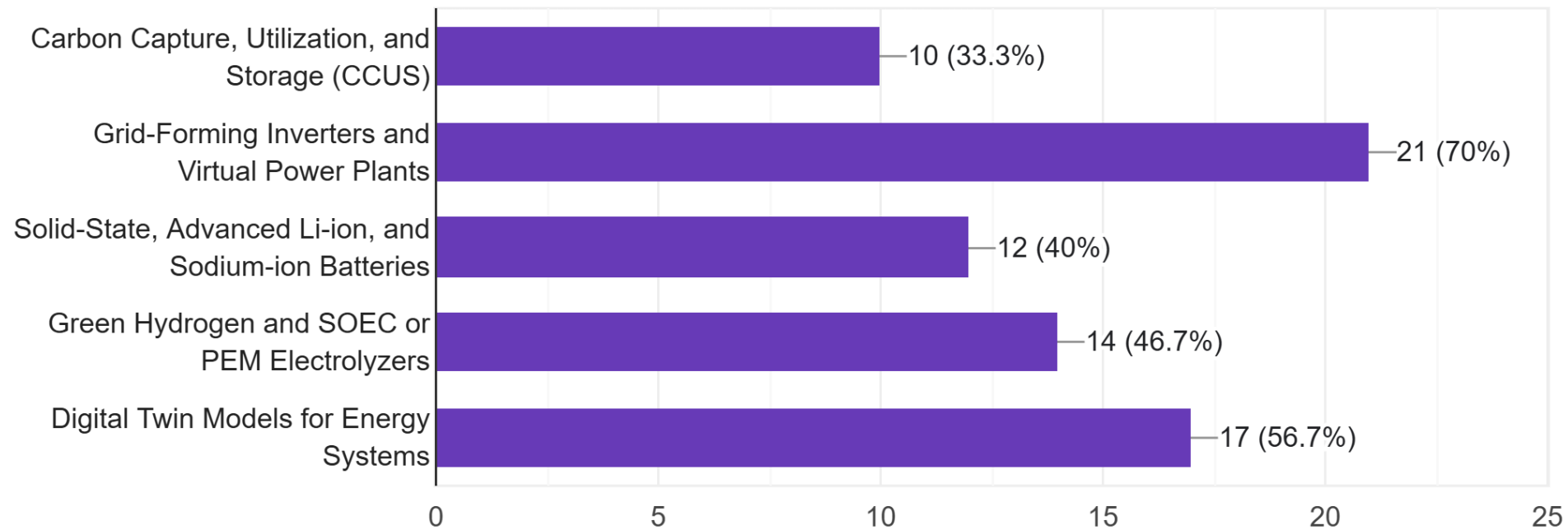


This result may lead to collaborative research on renewable energy integration and large-scale grid stability.

Report on Pre-Survey Results (7)

Q7. What future webinar topics would you like to see? (Multiple answers allowed)

30 responses



This result may lead to a webinar on grid-forming inverters and virtual power plants.

25th IERE General Meeting and RWE TI Germany Forum

In-Person Event

Venue:

Clayton Hotel, Düsseldorf, Germany

Date:

December 2 (Tuesday)–5 (Friday), 2025

Co-host:

RWE TI



Now Call for Registration,

<https://www.iere.jp/events/forum/2025-germany/index.html>



10th IERE Webinar on High Voltage Direct Current (HVDC)

RWE

25th IERE General Meeting and RWE TI Germany Forum

Main Theme:

Growing Green

Session Themes:

1. Flexible Power Generation for a Decarbonized Future
2. Pathways to Net Zero: Strategies for a Decarbonized Energy Future
3. Beyond the Peak: Storage Solutions for Resilience and Reliability
4. Grid Interaction, Optimization with Variable Renewables and Demand-Side Management
5. Transforming the Past: The Future of Existing Infrastructure & Assets
6. vgbe-TENPES Workshop

Technical Tour:

Visiting RWE Innovation Center



Thank you very much for joining our event!



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