# Webinar Recap: "Powering Forward: Key Takeaways from 2024 and What's Next for DER in 2025"

The SunSpec Alliance hosted a comprehensive webinar to review pivotal 2024 milestones in the Distributed Energy Resources (DER) sector and preview upcoming initiatives and trends for 2025. The session featured insights from SunSpec leaders and industry experts, including SunSpec Executive Director Dylan Tansy, Software Engineer Kudrat Kaur, and Chairman Tom Tansy. Below is a detailed summary of the discussions.

## Key 2024 Milestones

1. **SunSpec Modbus and IEEE 1547 Compliance**:
   - The SunSpec Modbus standard continues to be a cornerstone for implementing IEEE 1547, which governs interconnection requirements for grid-tied DER systems in North America.
   - In 2024, significant updates were made to the SunSpec Modbus protocol to enhance clarity, resolve ambiguities, and refine testing procedures. These updates were informed by feedback from members, authorized test labs, and industry stakeholders.
   - Notably, these refinements were critical to ensuring better interoperability and reducing compliance issues during the certification process.
   - Companies such as Sötech, Tristar, Destin, Line Energy, and Franklin WH completed the SunSpec Modbus certification, showcasing leadership in achieving high-quality communication interfaces.

2. **Express Test Program Launch**:
   - In response to manufacturers' challenges in meeting compliance requirements, SunSpec introduced the Express Test program. This innovative approach allows manufacturers to conduct remote protocol compliance testing via the internet, minimizing logistical hurdles and costs.
   - The program leverages SunSpec's software tools and enables manufacturers to achieve certification without needing to ship hardware to testing facilities.
   - This streamlined process significantly reduces the time required for compliance testing, providing manufacturers with a more efficient pathway to certification.

3. **Cybersecurity Advancements**:
   - Recognizing the growing importance of cybersecurity in DER systems, SunSpec expanded its cybersecurity framework by introducing new device conformance profiles and testable functions.
   - These profiles align with global cybersecurity standards, including the European Union's NIS 2 initiative, ensuring manufacturers can comply with evolving regulatory requirements worldwide.
   - The cybersecurity framework includes measures such as password management, multi-factor authentication, firmware update verification, and event logging, which are increasingly critical for DER resilience.

4. **Vehicle-to-Grid (V2G) Integration**:
   ○ SunSpec's support for V2G standards grew in 2024, incorporating Modbus into key SAE standards, including J3068 and J3072.
   ○ The rise of electric vehicles (EVs) in both passenger and commercial sectors has highlighted the need for robust communication protocols to support grid integration.
   ○ These advancements enable seamless interaction between EVs and the grid, unlocking new opportunities for energy management and storage.
5. **CPUC Decision on CIP Revisions**:
   ○ A significant milestone was achieved with the California Public Utilities Commission (CPUC) decision to revise the Common Inverter Profile (CIP) standard and associated test procedures.
   ○ This decision mandates participation from California's major investor-owned utilities, including SDG&E, PG&E, and SCE, in updating the CIP.
   ○ SunSpec will play a key role in overseeing test specification development and convening workgroups to ensure the updates reflect industry needs.
   ○ This effort underscores the importance of maintaining rigorous standards for DER interoperability and compliance.

## 2025 Initiatives

1. **Continued Focus on Cybersecurity**:
   ○ The upcoming year will see intensified efforts to develop cybersecurity compliance criteria that are universally applicable across North America, Europe, Asia, and other regions.
   ○ SunSpec aims to bridge gaps in the U.S. cybersecurity policy landscape by advocating for baseline measures, including secure firmware updates and robust authentication protocols.
2. **Standards and Specifications**:
   ○ Updates to the IEEE 2030.5 and SunSpec Modbus standards will focus on addressing compliance gaps and adapting to new technological advancements.
   ○ The transition toward a profile-based approach will set common baselines for device manufacturers, fostering greater interoperability and reducing discrepancies in standards adoption.
3. **Rapid Shutdown and Safety Standards**:
   ○ The newly announced DC Fire Stop initiative will extend safety measures for solar arrays to utility-scale systems, ensuring protection for operators and emergency responders.
   ○ This initiative reflects SunSpec's commitment to addressing safety concerns in both residential and large-scale solar installations.
4. **Professional Development**:
   ○ SunSpec's online curriculum, which includes over 20 courses, will continue to expand in 2025. These courses cover a wide range of topics, such as cybersecurity, standards compliance, and DER best practices.

- Members are encouraged to leverage these resources to enhance their technical expertise and industry knowledge.

## Major Events and Collaboration Opportunities

- **InterSolar and Energy Storage North America (February 2025)**:
  - SunSpec will lead two key conference sessions:
    - "DER and Solar + Storage Integration: Unlocking Value through Interoperability"
    - "Securing the Future: Cybersecurity Strategies for DER Systems"
  - Attendees can use SunSpec's exclusive discount code to receive 20% off conference passes or free expo access. See registration instructions in the email
  - These sessions will provide deep dives into critical topics, including the integration of DER systems and advanced cybersecurity measures.
- **Engagement Opportunities**:
  - SunSpec emphasized its commitment to fostering collaboration through one-on-one meetings, webinars, and industry events. Participants are encouraged to schedule meetings or visit SunSpec's booth at InterSolar for in-depth discussions. See calendar for scheduling meetings in the email.