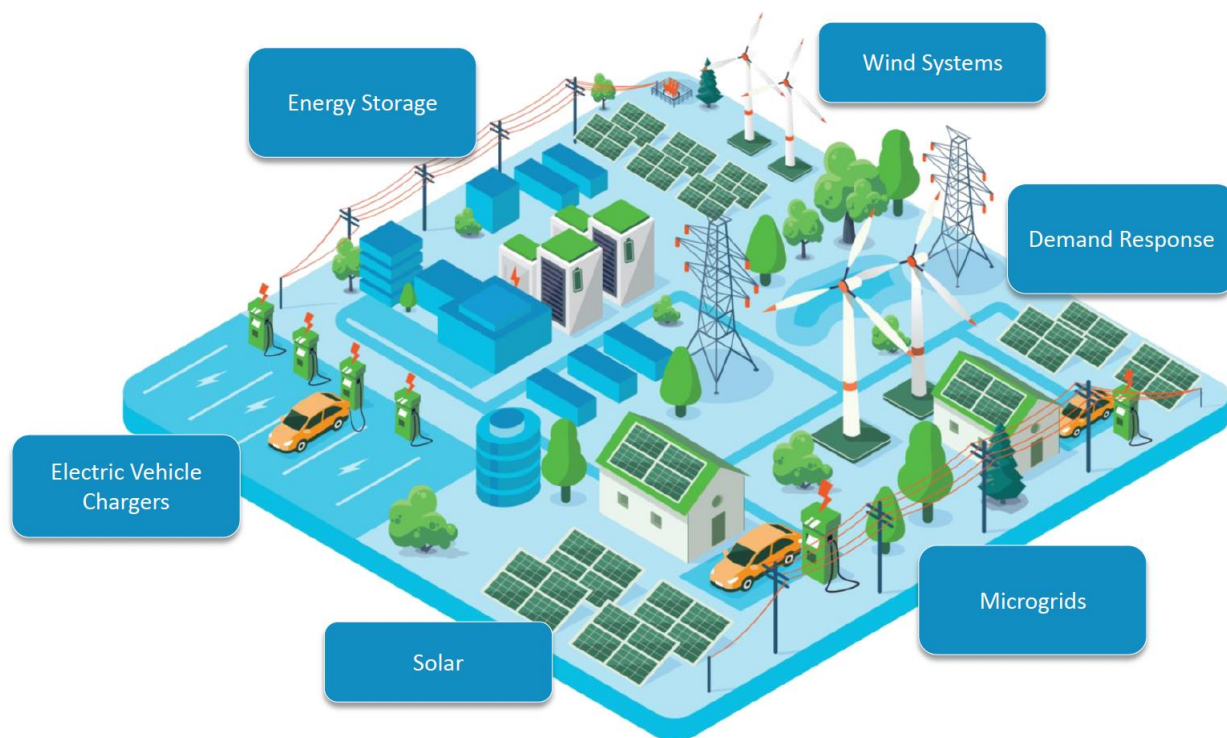


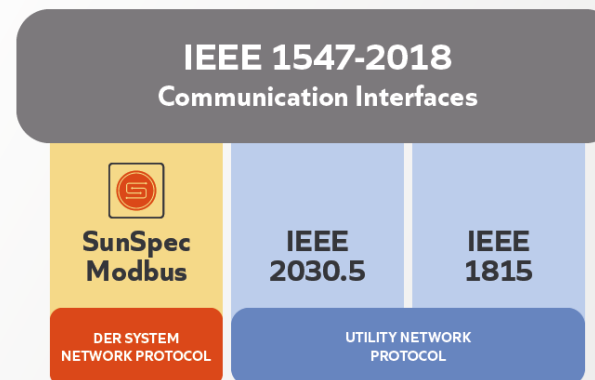
Cybersecurity: An Essential Component of the Distributed New Energy Grid

Tom Tansy
Chairman of SunSpec Alliance,
CEO of DER Security Corp

DER & EV Fleets Rely On Internet-Based Networks



- Distributed generation + demand management
- Omnidirectional power flow
- Dynamic loads
 - EV charging: a tsunami of demand coming
- Designed for flexibility
 - Variable voltage and frequency
 - User preference-based load/generation management
 - Remote ops staff, continuous network control
- Security perimeter defined by the Internet



New Grid Security Challenges

- Millions of new DERs coming online fast
- Insecure components
 - Non-standard protocol stacks
 - Foreign adversary authored firmware
- No DER monitoring by grid operators
 - No detection of misbehaving systems
 - No ability to mitigate
- New services
 - User- and grid preference defined
 - Conflicting priorities at grid level
- New attack patterns
 - Novel cyber/physical exploits
 - Control-/power-plane junction attacks
 - Weaponization of the grid via the internet
- Generic solutions don't work on their own
 - Poor support for energy-specific protocols
 - No correlation of cyber/physical threats
- Poor coordination across grid regions
 - No ability to create action plans for emerging/coordinated attacks
 - Poor recovery planning & execution

Mandates Are Coming...From States & Industry

Directives & Regulation



Test & Certification Programs



NARUC
National Association of Regulatory
Utility Commissioners

Thank You

- Tom Tansy
- CEO, DER Security Corp
- Chairman, SunSpec Alliance
- tom@dersec.io
- 831-227-1073