

## **Aggregation and Grid Security Workshop**

## A two-day workshop on DER and VPP cybersecurity

## **DAY 1** | Tuesday, June 17

TIME	TITLE
8:30 – 9 a.m. (30 min.)	Arrive at NREL South Table Mountain Campus, East Visitor Gate  You will be directed to the visitor parking garage. Walk to the Research Support Facility (RSF) reception area, where you will be met by your escort.
	Light Refreshments and Networking   Location: San Juan Conference Room, RSF
9 – 9:30 a.m. (30 min.)	Welcome and Opening Remarks  Jordan Henry, Cybersecurity Research Center Director, NREL
9:30 – 9:50 a.m. (20 min.)	Workshop Introductions: Objectives and Expectations  Danish Saleem, Senior Cybersecurity Researcher, NREL  Transition to Location: Energy, Security and Resilience Lab, ESIF
9:50 – 10:45 a.m. (55 min.)	Threat-to-Consequence: Compounding Hazards Demonstration Robert Biestman, Cyber System Analysis Group Manager, NREL
	Open Discussion Transition to Location: San Juan Conference Room, RSF
10:45 – 11:15 a.m. (30 min.)	The Potential Impact of Compromised Original Equipment Manufacturer Aggregator Networks on Bulk Electric System Security Uri Sadot, Cybersecurity Program Director, SolarEdge Technologies
11:15 – 11:30 a.m. (15 min.)	Break
11:30 a.m. – 12:30 p.m. (1 hour)	Focus Session Topic 1: Cybersecurity Dependencies for Resilient DER Aggregations Facilitators: Bobby Jeffers, Cybersecurity, Energy Security, and Emergency Response Laboratory Program Manager, NREL; Adam Rosenstein, Enphase
	Focus Session Topic 2: Assessing the Impact of Compromised DER Aggregations on U.S. Energy Systems  Facilitators: Andy Hoke, Power Systems Engineering Principal Engineer, NREL; John Franzino, Chief Executive Officer, GridSecurity
12:30 – 1:30 p.m. (1 hour)	Working Lunch   Location: San Juan Conference Room, RSF Standards Library and Harmonization Strategy Danish Saleem
1:30 – 2 p.m. (30 min.)	From Metrics to Mindsets: How Industry and Regulators Tackle Risk  David White, President, Axio
2 – 2:30 p.m. (30 min.)	Cybersecurity Roles and Responsibilities of Stakeholders Involved in VPPs Richard Macwan, Cyber Resilience Science Group Manager, NREL
2:30 – 2:45 p.m. (15 min.)	Break
2:45 – 3:45 p.m. (60 min.)	Focus Session Topic 3: Ensuring Continuity in the Face of Cyberattacks Facilitators: Anuj Sanghvi, Senior Cybersecurity Researcher, NREL; Jennifer Flandermeyer, Cyber Intel and Government Affairs Director, NextEra Energy
	Focus Session Topic 4: Role of Aggregators in Securing VPPs Facilitators: Richard Macwan, Cyber Resilience Science Group Manager, NREL; Sharvil Shetty, Security Engineer, Tesla

4 – 5 p.m. (60 min.)	Optional Energy Systems Integration Facility Tour Ben Kroposki, Power Systems Engineering Center Director, NREL
6 – 8 p.m. (2 hours)	No Host Social   Downtown Golden Location

## DAY 2 | Wednesday, June 18

TIME	TITLE
9:00 – 9:30 a.m. (30 min.)	Arrive at NREL South Table Mountain Campus, East Visitor Gate  You will be directed to the visitor parking garage. Walk to the RSF reception area, where you will be met by your escort.
	Light Refreshments and Networking   San Juan Conference Room, RSF
9:30 – 9:45 a.m. (15 min.)	Recap of Day 1 and Kick Off Day 2 Danish Saleem
9:45 – 10:15 a.m. (30 min.)	Plugging the Gaps: Cybersecurity Standards for Resilient DERs and VPPs Lynn Costantini, Deputy Director, National Association of Regulatory Utility Commissioners
10:15 – 10:45 a.m. (30 min.)	Fast-Tracking Technology Solutions to Boost Cybersecurity in VPP and Aggregator Operations Nik Urlaub, Senior Cybersecurity Researcher, NREL
10:45 – 11:45 a.m. (60 min.)	Focus Session Topic 5: Can You Say That in English? Simplifying Grid Reliability and Security Standards with Common Sense Language Facilitators: Charles Magill, Senior Wind Cybersecurity Researcher, NREL; Lynn Costantini
	Focus Session Topic 6: The Role of Mission Rehearsal in U.S. Grid Resilience Facilitators: Shane McFly, Senior Cybersecurity Researcher, NREL; David Benton, Threat Informed Resilience Senior Advisor, Berkshire Hathaway Energy
11:45 – 12:15 p.m. (30 min.)	Closing Remarks  Danish Saleem; Emily Waligoske, Technical Project Manager, NREL
12:15 p.m.	Adjourn
1 p.m.	Shuttle from NREL to Marriot
1:15 p.m.	Shuttle from Marriot to Flatirons Campus for Tour
2 – 3:30 p.m. (90 min.)	Optional Flatirons Campus Tour  Daniel Laird, National Wind Technology Center Director, NREL; Jeroen van Dam, Chief Researcher, NREL