Jennifer Szaro

WORKING GROUPS

In-Person Meetings at FSEC have Occurred

1. **Energy-Efficient Buildings** Lead: *Rob Vieira*

2. **Grid Modernization/Energy System Integration** Lead: *Manjunath Matam*

3. **Solar Energy/Storage Systems** Lead: *Mengji Li*

4. **Electric Transportation** Lead: *Rich Raustad*

5. **Hydrogen/Biomass/CO$_2$** Lead: *Jim Fenton*

6. **Education, Service, Workforce Training, Policy** Lead: *Colleen Kettles*

Invite FSEC Advisory Board Members or Designees to Attend Quarterly Virtual Meetings.

Working Group Program Area	Program Focus
Energy Efficient Buildings	Building science, indoor air quality, smart energy efficient devices and systems, load management, weatherization, affordable housing applications, and deep retrofits.
Grid Modernization/ Energy Systems Integration	Energy systems integration, including vehicle to building technology, grid-interactive efficient buildings, smart buildings, demand management, smart mobility, and resiliency. Connected Communities and Virtual Power Plants.
Solar Energy/Storage Systems	Photovoltaic systems, performance, durability, testing and certification; PV cell/module manufacturing; and, distributed energy resources. Electrochemical lithium & flow batteries, thermal storage (chilled water, water heaters).
Electric Transportation	Sustainable transportation, electric vehicles, autonomous systems, and infrastructure
Hydrogen/ Biomass/ CO_2 Valorization/ Catalysis	Hydrogen Production (electrolyzers), Consumption (fuel cells, turbines (H2 and H2/CH4), use as a feedstock, gas turbine ramping with more solar on the grid, H2 catalysis. Using catalytic processes to convert biomass and CO2 to fuels (renewable natural gas, gasification, and pyrolysis) and chemical feedstocks.
Education, Service, Workforce Training, Policy	K-12 STEM education, curricula and credential development, public education, outreach and marketing, energy minors for BS/BA, MS, PhD, PV on Schools, energy policy analysis, codes and standards development and administration, apprenticeship

Outcome of Initial Working Group Meetings

- **Staff:** Increased opportunities require increased specialized staff

- **Collaboration:** Increase partnerships

- **Topics:** Big data, durability

- **Roles:** Consulting and Implementation in addition to Research and Training

- **Maintenance:** Maintain test facilities