Discussion

• Applications Requirements: Control, Integration and control of renewables and storage. Microgrids, congestion relief, supply and demand response. Distribution Automation.

• Stakeholders: Power producers, ISOs, grid operators, utilities, power electronic equipment manufacturers, energy and power generation/storage manufacturers. (related stakeholders also include regulators, safety/standards bodies, rate payers, investors) & Government.

• System Performance Issues: Cost, efficiency, reliability, overload, fault behavior. Advantages and possibilities

• Technical barriers/issues: Controls, communications, anti-islanding, lvrt, optimization (device, site, system,… ), EPC, Simulation,

• Hardware Issues – What are the gaps in terms of devices, systems, integration,

• Technology Demonstration Issues (Modeling, Demo)

• Technologies, scale, number

Progress made to date
Potential
Plans-Maps-Gaps
Risk Aversion – Adoption
Rugged, Square SOA
Applications Requirements:
Control of voltage, power-factor and faults through solid-state devices.
Integration and control of renewables and storage.
Seamless isolation from grid outages and disturbances through microgrids.
Ability to relieve congestion.
Achieve improved demand and supply response.
-speed?
-strengths and weaknesses?
-needs?
-differences from E/M
-devices, solid state, other
Stakeholders:

- Power producers, ISOs, grid operators, utilities, power electronic equipment manufacturers, energy and power generation/storage manufacturers. (related stakeholders also include regulators, safety/standards bodies, rate payers, investors)

- do we have a full discussion?
- can we leverage other issues?
System Performance Issues:

- a. Cost, efficiency, reliability, Temperature rating, RBSOA, overload, fault behavior
- b. Advantages and possibilities

-5% or 15%?
-”core” cost at high power is ~30%
-Sunshot goals? (10c/W)
Technical barriers/issues:

a. Controls, communications, anti-islanding, lvrt, optimization (device, site, system,...)
b. EPC
c. Simulation
Hardware Issues:
- What are the gaps in terms of devices, systems, integration?

Technology Demonstration Issues:

Technologies, scale, number:

Commercial Penetration: