**Working List of Scenarios Topics for 2022-2023 Study Effort**

**Climate Change**

* Examine as stand-alone item or as integrated into larger scope of work?
* How to quantify differing resources: assume percentage levels of impact or use temperature change gradient, etc?
* WECC previously built its own model (2014 – Energy, Water, Climate) but WECC efforts historically exclude long-term drought considerations and temperature increase levels projected now already met (less than 10 year horizon)
* Consider change significance against load-growth projections (vice versa)
* Distinguish short and long-term event/scenario variabilities; how do these cause differing system vulnerabilities?
* Consider other WECC work on extreme natural events
* What institutional changes will climate change bring/compel? How should the scenarios consider those?
* Refer to subject experts when initial SWG work structure established so that modeling work can most reliably and efficiently capture the subject (involve at final scoping step)
* “Worst case” scenario inclusion (select conditions for illustration)

**Transmission Futures**

* National grid effort reference/review
* Microgrid deployment significance/role in WI on 20 year horizon
* Role of operational interests (e.g., SPP/CAISO)
* Security vulnerabilities (reliability priority)
* Old WECC study as reference/historic resource (Tres Amigos)
* Cost-benefit perspective versus other approaches to security and stability (e.g. microgrids)

**Cybersecurity**

* Institutional treatment by power sector
* Consider operational challenges (stand alone and with approach/tool diversity across system operators)
* Treat as a consequence within a scenario or evaluate as individual priority?
* Prioritize available tools for evaluation/consideration (e.g., Grid X)
* DOE action to make security controls uniform across its agency divisions; model for entire power sector?

**EV Deployment Scenarios**

* Charge/discharge performance and function/control
* Use total vehicle volume or other value?
* Behind the meter factor
* Incentives?
* Real-time pricing?
* Compare to/consider like renewable resources?
* Charging data managed by serving utilities?

**Renewables Penetration/Resource Diversity Considerations in Grid Operations**

* General EV footprint (see above)
* Off-shore wind contribution increase
* EV charging profile consequence (day/night and rapid versus slow)
* Resource adequacy issues (resource disparities/type variations, integration complexities/sensitivities study, operational actualities)
* Disparities in regulatory environments
* Hydrogen resource reliance/integration (green, blue, etc.)